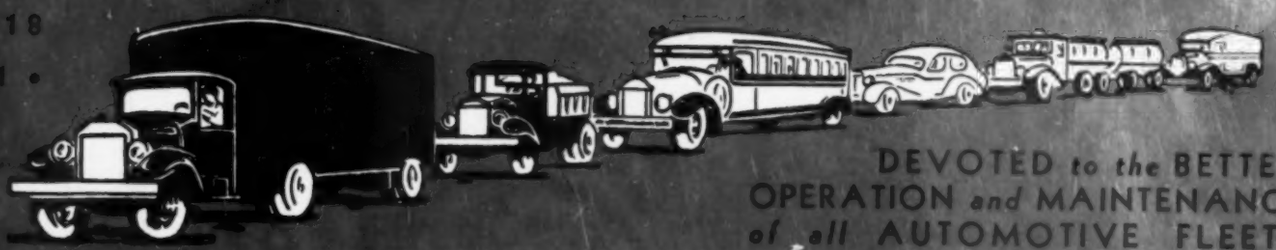
# FLEET OWNER

VOLUME 18
NUMBER 1 •



DEVOTED *to the* BETTER OPERATION *and* MAINTENANCE *of all* AUTOMOTIVE FLEETS

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•
JANUARY
1937
•

# FORD SHOWS THE WAY

## TO LOWER TRUCKING COSTS

## NEW ECONOMY...NEW STYLE...CHOICE OF

# TWO V·8 ENGINES

## IN THE NEW 1937

# FORD V·8 TRUCKS

## AND COMMERCIAL CARS

**Ford sets the pace in hauling and delivery economy! Two V-8 engine sizes give you a choice of power to fit your own individual needs. The improved 85-horsepower V-8 engine assures economy for heavy-duty service. The new 60-horsepower V-8 engine sets an entirely new standard in the light delivery field. It will pay you to get the facts about this Specialized Transportation.**

**In addition to the most advanced style in truck design, Ford introduces many new features that assure lower operating cost and longer life. These are added to the many tried and tested features which have won the enthusiastic approval of Ford owners for years. Ask your Ford dealer for an "on-the-job" test—with your own load, under your own operating conditions.**

Ford

**MATCHING THE HIGHEST IN QUALITY . . . SELLING WITH THE LOWEST IN PRICE**

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MAR 17 1937
DETROIT

# Packard "440" gives MORE MPR

*

(MILES PER REPLACEMENT)

You judge the value of lubricants or tires by the number of miles you get out of them. Why not apply a similar measuring stick to the ignition cables you buy? After all, *it's the number of miles you get from your cables before they break down and need replacement that really determines their value.* Fleet owners the country over have found that Packard FOUR-FORTY gives the most MPR. Packard FOUR-FORTY gives longer service, more operating miles—and, because of its greater life, it eliminates one cable replacement out of every three! Install Packard FOUR-FORTY on your equipment now—see how it cuts fuel costs, improves performance and eliminates cable replacements! Your jobber has Packard FOUR-FORTY. Order from him. Packard Electric Division, General Motors Corporation, Warren, Ohio.

Packard
REG. U.S. PAT. OFF.
TRADE MARK

THE STANDARD WIRING EQUIPMENT OF THE AUTOMOTIVE INDUSTRY

*

AND *MORE*
MPR
MEANS *MORE*
PROFITABLE RESULTS!

# "Look what the

***The 1936 Bus Maintenance Award Winners**

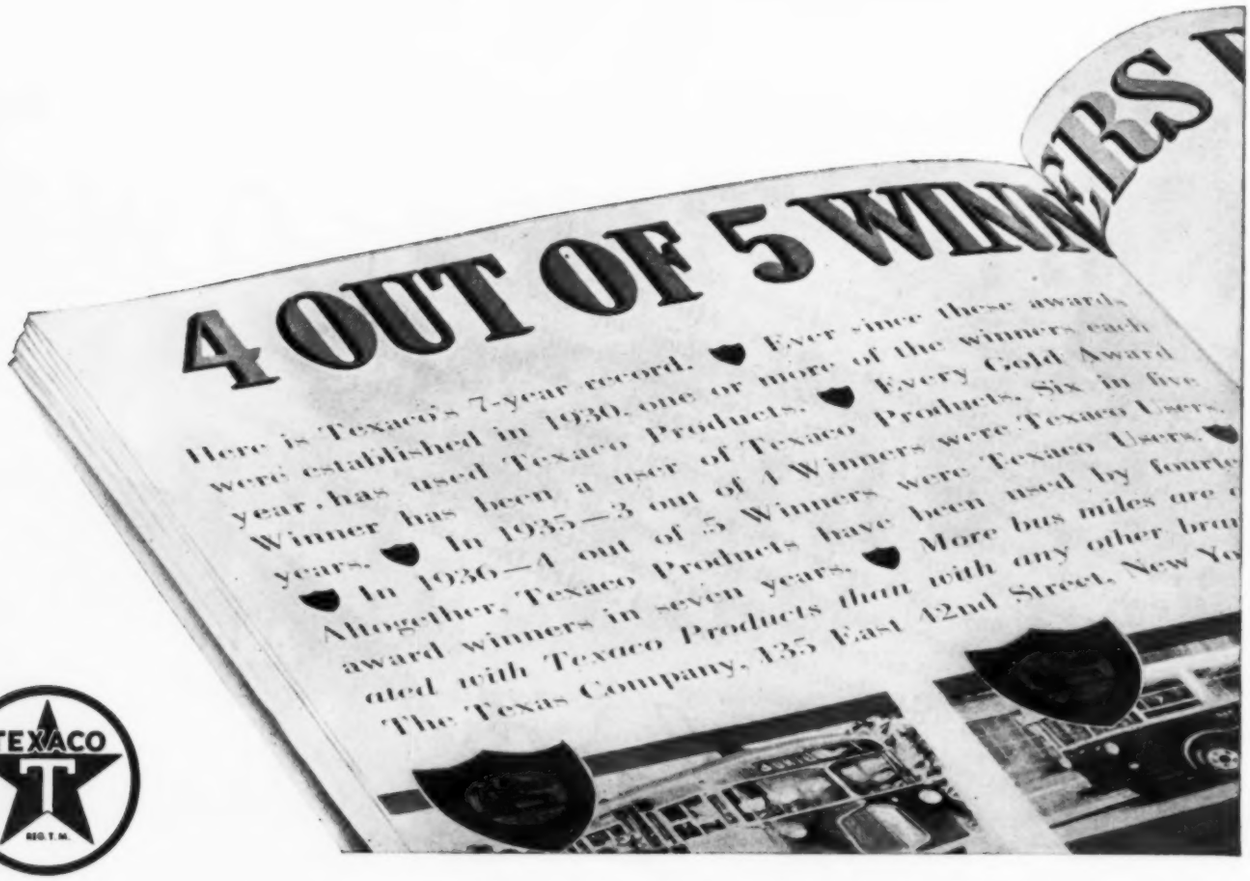
Each year the publication Bus Transportation awards gold, silver and bronze medals to the Bus Operators who have made the greatest reduction in their maintenance costs. In 1936 the winners were:—

GOLD—Greyhound Management Co. *Cleveland, Ohio*
GOLD—Motor Transit Co. *Jacksonville, Fla.*
SILVER—De Camp Bus Lines *Livingston, N. J.*
SILVER—San Antonio Public Service Co. *San Antonio, Texas*
BRONZE—Oshkosh City Lines, Inc. *Oshkosh, Wis.*

GREYHOUND used Texaco. So did Motor Transit, San Antonio, and Oshkosh.*

You can make maintenance records, too—in your own trucks—with this New Texaco Motor Oil. You will use less oil . . . get lower fuel consumption . . . because . . .

Made by the New Texaco Furfural Process it is cleansed of all harmful gum, sludge, and carbon forming elements. *More bus miles are*


4 OUT OF 5 WINNERS
Here is Texaco's 7-year record. ♥ Ever since these awards were established in 1930, one or more of the winners each year has used Texaco Products. ♥ Every Gold Award Winner has been a user of Texaco Products. Six in five years. ♥ In 1935—3 out of 4 Winners were Texaco Users. ♥ In 1936—4 out of 5 Winners were Texaco Users. Altogether, Texaco Products have been used by fourte award winners in seven years. ♥ More bus miles are ated with Texaco Products than with any other bra The Texas Company, 135 East 42nd Street, New Yo

TEXACO REG. T. M.

# *New* TEXACO

# *winners** used!"

*lubricated with Texaco Products than with any other brand.* The same economies are possible in your trucking equipment, too.

A Texaco representative will be glad to provide practical engineering service to prove the economies of Texaco Products.

☆ ☆ ☆

THE TEXAS COMPANY · 135 E. 42nd St., N. Y. C.

*Nation-wide distribution facilities assure prompt delivery*

# MOTOR OIL

# Duplate

*...your assurance of Safety Glass excellence*

THE name "Duplate", etched in the corner of a sheet of safety glass, is your best assurance of high quality. Duplate Safety Glass is made by the Pittsburgh Plate Glass Company ... for fifty years a leader in glass making, glass research, glass development. It is the worthy product of a company internationally famous for quality glass. And its record of dependable performance since first introduced, indicates the service you may expect from it.

Therefore, make sure any new equipment you buy has Duplate all around. And for glass replacement in present equipment, call your nearest Duplate dealer. You will find him listed in the "Where to Buy It" section of your telephone book. Meanwhile, we invite you to write the Pittsburgh Plate Glass Company, Pittsburgh, for complete information on Duplate Safety Glass, and on Duolite, the Safety Pennvernon Glass.

Duplate Safety

Pittsburgh Plate Glass Company

GMC

THE TRUCK OF VALUE

# Announcing for 1937 . . . A new and complete line of GMC trucks . . . Advanced stream-styling that sets a new standard . . . New Cab-Over-Engine models ranging in capacity up to 12 tons and including the lowest priced 1½ ton of this type now offered . . . New ½-tons in both 126-inch and 112-inch wheelbases, the latter priced at only $395, chassis f. o. b. Pontiac . . . Improvements and refinements throughout the entire line . . . In every capacity range an exceptional value. $395 AND UP

CHASSIS F. O. B. PONTIAC

*Time payments through our own Y. M. A. C. Plan at lowest available rates*

## GENERAL MOTORS TRUCKS & TRAILERS

GENERAL MOTORS TRUCK & COACH
DIVISION OF
YELLOW TRUCK & COACH MANUFACTURING COMPANY, PONTIAC, MICHIGAN

# WEED AMERICAN *Bar-Reinforced* TIRE CHAINS

## MORE THAN DOUBLE SAFE MILEAGE

THE CHEAPEST TIRE CHAIN *Mileage* RIGHT HERE

You can see three big features in the picture—1, bar-reinforcements double welded to cross chains; 2, hardened electric welded side chains; 3, Weed patented lever lock end hook. The fourth feature you can't see because it's in the metal—4, Weedalloy, tougher and harder. These combine to give more than double mileage, increased traction, greater safety, the cheapest tire chain mileage you can buy. The best buy in tire chains—tests prove it.

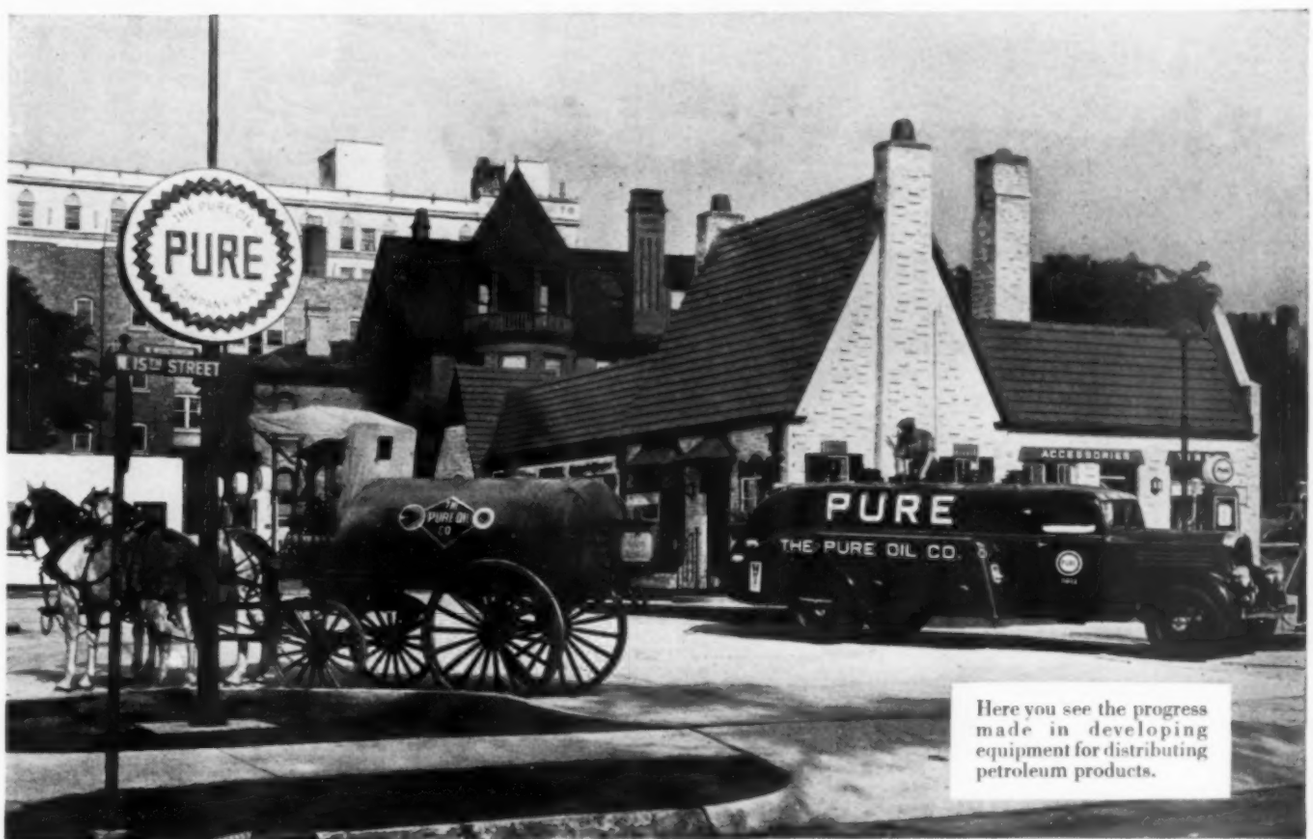
**AMERICAN CHAIN DIVISION**
BRIDGEPORT, CONNECTICUT
**AMERICAN CHAIN & CABLE COMPANY, INC.**
Boston, New York, Philadelphia, Pittsburgh, Chicago, San Francisco

Licensed to manufacture and sell Bar-Reinforced Tire Chains under United States and Canadian Letters Patent: American Chain & Cable Company, Inc.; The McKay Co.; The Hodell Chain Co.; Pyrene Mfg. Co.; Dominion Chain Co., Ltd.; and Pyrene Mfg. Co. of Canada, Ltd.

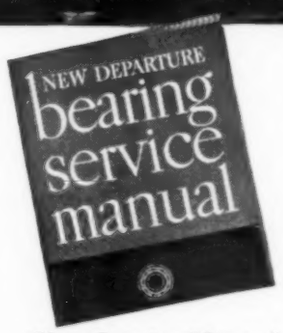
# Tank Wagons Improve—

## ...SO DO BEARINGS

***The Pure Oil Company's big fleet rolls smoothly on the newest types of New Departure forged steel bearings***




Here you see the progress made in developing equipment for distributing petroleum products.




**New Service Manual Now Ready**

Tells everything you want to know about servicing bearings—removing, cleaning, mounting, adjusting gears, etc., etc. Mail post card for your free copy to General Offices, United Motors Service, Inc., 3044 W. Grand Blvd., Detroit, Mich.

It is not unusual for a New Departure Ball Bearing in a motor truck to be in perfect condition after 100,000 miles. New Departure's *forged* steel makes them tough.

That's why The Pure Oil Company specifies New Departure Ball Bearings for all replacement work.

There's a New Departure distributor near you. He's there to serve you. He knows bearings. He keeps an adequate stock. He can save you time and money.

UNITED SERVICE MOTORS
A NATIONAL ORGANIZATION

# NEW DEPARTURE

## THE *FORGED STEEL* BEARING

● Still standing . . . but not punching! He's "out on his feet!" Ignition cable can be "out on its feet" too. After 10,000 miles or less, ordinary cable may still be in place . . . with no bare wiring showing. But actually it is increasing your operating costs because it isn't delivering the punches . . . the fat, hot spark that puts pep in a motor. Current is leaking through thousands of invisible holes where dirt, oil, grease, moisture and corona have attacked the insulation. Cable in this condition *cannot* do its job as a vital part of the ignition system. Tear it out and replace with Sterling Silver-Sheathed!

**Why Sterling Silver-Sheathed Puts New Pep in Motors**

Sterling Silver-Sheathed Ignition Cable (U.S. Pat. No. 1,987,508) is better because:

1. Its silvery coating is effective armor against dirt, moisture, oil, grease and corona.
2. Special lacquer makes Silver-Sheathed remarkably heat-proof and flame-resistant.
3. Flexible even at low temperatures—will take a 2-inch bend at 12 degrees below zero without cracking.

A handy Service Kit helps your shop do a factory-like job. You'll improve vehicle operation through quicker starting, smoother running. And you'll save money on more miles per gallon of gas. Sterling Silver-Sheathed is available in sets as well as spools.

**STERLING CABLE CORPORATION, PORT HURON, MICH.**
A Division of Electric Autolite Co.

**Sterling**
"AN AUTO-LITE PRODUCT"
AUTOMOTIVE WIRES AND CABLES
U.S. PAT. 1,987,508

*The*

# FLEET OWNER

*Published Monthly in the interests of Automotive Fleet Owners, who maintain their own Repair and Service Shops and devoted to the better Operation and Maintenance of Truck, Trailer, Bus, Passenger Car, Taxicab and all Automotive Fleets.*

VOL. 18 New York, January, 1937 No. 1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Charter ABC Member



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# *Now you can* FILL THE GAPS
## BETWEEN YOUR TRUCK'S 4 SPEEDS

Although truck engines may be highly perfected and deliver smooth, flexible power, they are severely handicapped unless the power is properly ratioed through the driving wheels. A truck having only 4 or 5 speeds is handicapped because it has big gaps between those speeds. Watson-Brown-Lipe Auxiliary Transmissions provide more gear ratios . . . a higher high, a lower low, and fill in the gaps between. This multiplies truck performance.

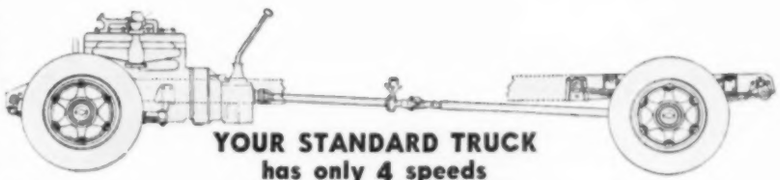
### "3 Axle Ratios Are Better Than 1"

Most trucks have only ONE rear axle ratio. In an effort to improve performance truck operators often change rear axle ratios or use two-ratio axles. But by installing a Watson-Brown-Lipe Transmission, the problem is completely solved because it gives the truck a 3-AXLE RATIO without changing the axle and provides 12 speeds forward and 3 reverse. The 3-speed Watson-Brown-Lipe gives you an Underdrive, Overdrive, and Direct all in one unit or you can select a 2-speed model for Underdrive or for Overdrive.

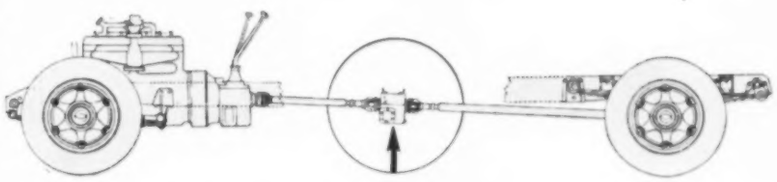
### Consider These Advantages

More pulling power; faster trips; no lagging on the road; less wear and tear; saves gas and oil; no axles to change; longer brake life; greater engine life; more loads handled; greater profits.

GAP LOW GAP 2nd GAP 3rd GAP HIGH GAP

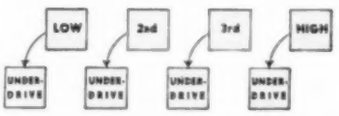


**YOUR STANDARD TRUCK**
**has only 4 speeds**
**with big gaps between**

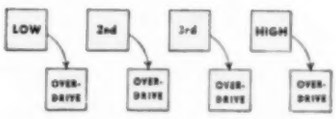


**SAME TRUCK WITH A 3-SPEED AUXILIARY**
**has 12 speeds with all gaps filled in.**

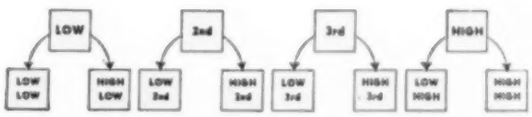
**THESE DIAGRAMS SHOW HOW WATSON-BROWN-LIPE AUXILIARY TRANSMISSIONS FILL THE GAPS**



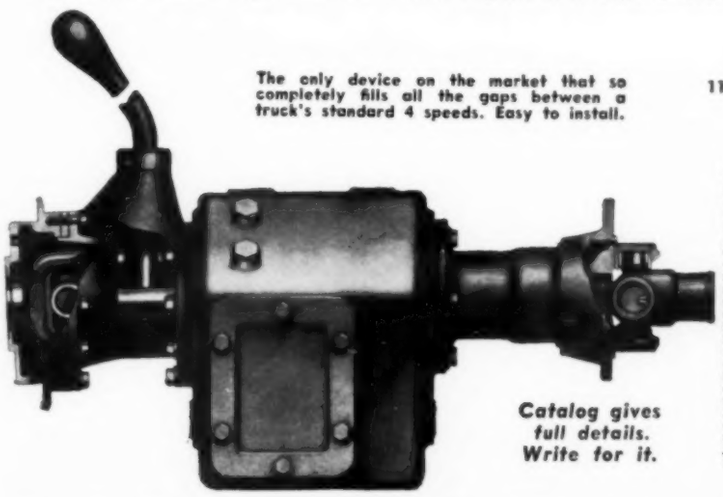

**2-SPEED UNDERDRIVE AND DIRECT**
Gives 8 speeds forward plus 2 reverse.




**2-SPEED OVERDRIVE AND DIRECT**
Gives 8 speeds forward plus 2 reverse.




**3-SPEED UNDERDRIVE, OVERDRIVE AND DIRECT**
Gives 12 speeds forward plus 3 reverse, Gives 3 axle ratios.



The only device on the market that so completely fills all the gaps between a truck's standard 4 speeds. Easy to install.

*Catalog gives full details. Write for it.*

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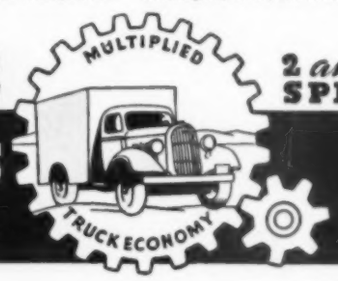
## *Auxiliary* TRANSMISSIONS




2 and 3 SPEED

"3 AXLE RATIOS ARE BETTER THAN 1"

# Record Sales Gains Now Make P
# New White Truck at a New L

●

**INVESTIGATE**

**TODAY'S WHITE VALUES**

**FOR EVERY KIND OF OPERATION!**

●

**12 STREAMLINED MODELS;** 12,000 lbs. gross and up; trucks and tractors; four and six wheels; graduated in size, weight and power, giving a wide range of capacities—for every type of service.

**5 "CAB OVER ENGINE" MODELS;** White's amazing new line in light, medium and heavy duty capacities; optional features such as wheelbases, transmissions, rear axle ratios and tire sizes are available to meet the requirements of specific operations.

●

**STREAMLINED COACHES** for small, medium and large capacity inter-city service; in a wide variety of bodies.

**TRANSIT TYPE COACHES** powered by White's 12-cylinder "pancake" engine; 32-36-40 passengers.

**SMALL CAPACITY** metropolitan type transit coaches for city and inter-city service.

**WHITE ZEPHYR** for inter-city operation.

**SAFETY SCHOOL BUSSES** in all wanted capacities and body styles.

●

**INDIANA TRUCKS . . .** built by White—6,500 to 14,000 lbs. gross; all models newly streamlined; prices start at $695, chassis at factory.

# White
## THE Headliners for 1937
## TRUCKS

● White starts the new year with the most complete line of trucks in the industry—"The Headliners for 1937."

These Whites offer everything truck buyers want and must have for profitable transportation.

They are setting new standards in performance and value. They are the best looking trucks on the road. They are the safest trucks you can operate. They have the most economical truck engine ever built. Beneath their streamlined exteriors, they have that superior *White Quality,* all through the truck that makes for money-earning miles. In every capacity, from light duty to super heavy duty, there is a White Truck that is a leader in its field.

Introduced only last November, White's amazing new line of "cab over engine" trucks has already brought a rush of orders and repeat orders from operators. They are admittedly the first complete solution of the problems of this type of operation.

The new model 700—at the lowest price for which a White has ever sold—brings White Quality and performance within the reach of every operator. It is destined to help White far outdistance 1936—the biggest sales year in all White's history.

*Before you buy any truck see "The Headliners for 1937"*
*—at your nearest White Factory Branch or dealer.*

**TERMS AS EASY AS ANY IN THE INDUSTRY**

White's special finance plan is liberal, with rates as low as any in the industry. Your present truck may make the down payment on a new White.

# Possible a Low Price

THE NEW WHITE MODEL 700
12,000 LBS. GROSS

# $985 BASE PRICE

**AND UP—AT CLEVELAND PLANT** *for standard chassis*

• The biggest year's sales in White history—and White's sensational 93% registration gain last year*—nearly four times the industry's average every month—now makes possible White Quality at the lowest price in White history.

This gain came largely from operators who found their low priced "passenger car type" trucks unequal to many of today's hauling requirements. Look at last year's figures.* Registrations of 1½-ton trucks and over by the lowest price leaders increased only 2.8% while other makes of the same ratings increased 29.3% —*and White increased 93%!*

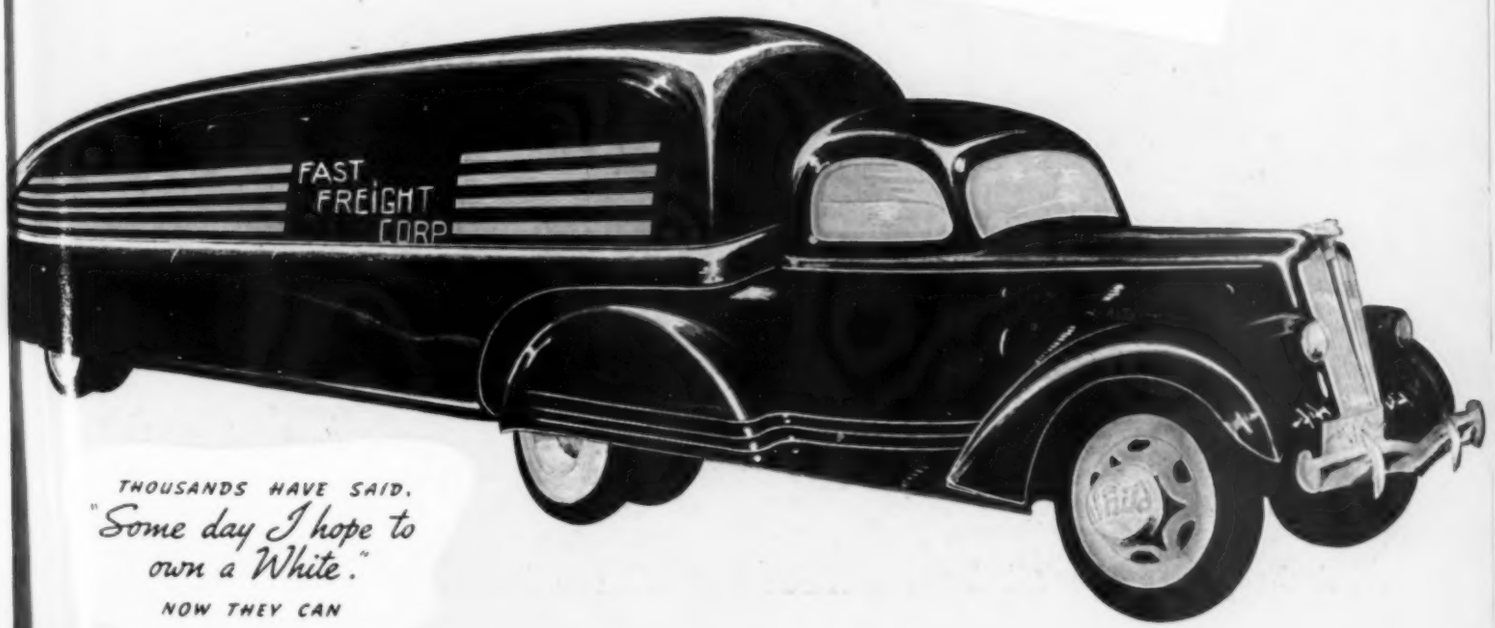
Now a record low price brings White performance to thousands of operators who want a real truck, quality built as a truck, to do a truck's work.

Every ounce a White—with White's modern performance, unequalled economy, exclusive safety features and "rolling billboard" advertising value—this new White actually costs you only slightly more than the "cheapest" trucks when you add up all the extras.

Now on display at the White Branch or dealer in your city. Telephone for a demonstration.

**THE WHITE MOTOR COMPANY · CLEVELAND**

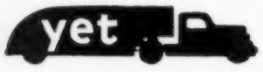
* 11 months' registration figures (latest available).




THOUSANDS HAVE SAID,
"Some day I hope to own a White."
NOW THEY CAN

# PLYMETL

# stronger




# lighter

A motor truck or trailer body strong enough to withstand constant hard wear and abuse, and yet light enough to cut body weight to a minimum — this is what every operator is looking for.

Plymetl for truck or trailer bodies meets both of these requirements. Though it is as strong and durable as steel, it is exceedingly light in weight and thus reduces haulage costs. Unlike many other materials which it is supplanting, it requires no inside braces or supports to give rigidity and strength, and so saves on precious inside space. Weight for weight, it's the strongest, lightest and most durable material available for body construction.

Plymetl comes in any transportable size wanted, and is easy to handle. Insist on Plymetl.

PLYMETL BODY BUILT BY HULET TOP & BODY CO.

OFFICES IN CHICAGO • DETROIT • NEW YORK

**HASKELITE MANUFACTURING CORPORATION**

208 WEST WASHINGTON STREET • CHICAGO, ILLINOIS

# CLE-AIR

## *Shock Eliminators*

### It Takes *AIR* to Provide Shock Elimination!

**We announce** an Air Suspension Unit designed for installation in conjunction with the rear steel springs of trucks, busses, and tractors, and on commercial trailers. Performing three functions—air suspension, shock elimination, and snubbing —Cle-Air Units insure maintenance of schedules, safety, and comfort for all types of commercial motor vehicles. Whether a fleet owner or the operator of a single truck or bus, you will want to know more about CLE-AIR Air Suspension Units, and what they will do for you. Bulletin 1236A on request.

**The Cleveland Pneumatic Tool Company**
AUTOMOTIVE-AIRCRAFT DIVISION
3734 East 78th Street
CLEVELAND, OHIO

# They Have 100 INTERNATIONALS

## and this is what they say about them:

"There are 100 Internationals in our fleet, comprising 98 per cent of all our trucks. The other 2 per cent represent competitive trucks purchased for testing them in comparison with the incomparable International.

"We still have and operate our *first* International, purchased in 1928. It has withstood over 100,000 miles of driving — daily use under all types of weather conditions — and it's still going strong.

"Internationals have become our standard truck. Our chief mechanic, Mr. F. Rasmussen, expresses the opinion that their durability, performance, operating economy, ease of repair, and light upkeep have fully earned them this right. Internationals never seem to wear out."

LARSEN BAKING CO., *Inc.*
New York City
*by* Lawrence E. Swensen
*Sales Manager*

**Is it any wonder, in the face of performance like this, that *truck users prefer* INTERNATIONALS?**

All Internationals are available on easy terms at low rates.

●

Sizes, Half-Ton to big Six-Wheelers.

●

Chassis prices start at

**$415**

f. o. b. factory

●

See the nearby Company-owned branch, or International Truck dealer, for complete information.

**INTERNATIONAL HARVESTER COMPANY**
(INCORPORATED)
606 So. Michigan Ave. Chicago, Illinois

# INTERNATIONAL TRUCKS

VOL. 18
NO. 1

# FLEET OWNER

JANUARY
1937

DEVOTED TO THE BETTER OPERATION AND MAINTENANCE OF TRUCK, TRAILER, BUS, TAXICAB, PASSENGER CAR, AND ALL AUTOMOTIVE FLEETS.

## Stripping *the* Thread » »

(The Editor's Column)

### SMOOTHIES BARRED

● We notice that the Public Service Commission of Pennsylvania has established what is believed to be a precedent for Public Utility Commissions, in setting definite standards as to what constitutes a safe tire on trucks, buses and taxicabs which come under its regulation. . . . After January 1st, all such vehicles must be equipped with tires having a well-grooved tread of *not less than one-eighth-inch deep*. . . . We understand that this is the first definite regulation applying to tire treads, perhaps because it has been difficult to set up a standard that would constitute a safe tire. . . . The idea seems to be o.k. to us, providing that indiscriminate regrooving is not practiced, which would serve sometimes to make an erstwhile safe tire unsafe, if you get what we mean. . . . Before deciding on regrooving, it is well to determine just how much tread rubber is left on the old carcass. . . . If the regrooving will bring your job down to fabric, the answer is a new shoe or a retread job, again providing that the carcass is in good physical condition to warrant it. . . . If in doubt, renew, is our advice to you!

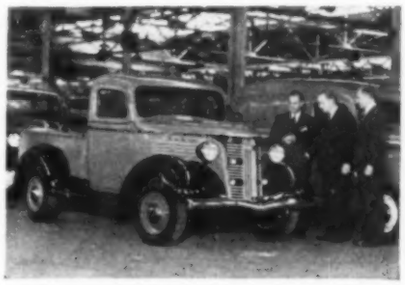
●

### TARDY ANNOUNCEMENTS?

● Getting "official" releases of new truck models this season has been like pulling teeth. . . . Of course if we did not respect factory confidences placed in us, we could previously have given you practically the whole works on two or three popular trucks, of which "teaser" announcements have appeared in other publications. . . . But since this is a *national* publication, and factory production and distribution must first be placed in high gear, it might prove somewhat embarrassing to some truck manufacturer who might have had a few sample jobs on view at the Newark Truck Show (in November) for instance, were we to go out and "steal his thunder" by broadcasting the details before he could have models placed in all branches and dealerships throughout the country. . . . So, if we come out with a new truck model announcement, and if you were one of the fortunate souls who had the privilege of some pre-announcement peek at a certain show, please remember that the interests of the *majority* must be served, and do not think that we are falling asleep on the job. . . . Or that we are miles behind anybody else in keeping you informed. . . . The fact of the matter is that we like to have confidences placed in us and we *respect* them. Of course, it's nice to ride on the band-wagon and all that sort of stuff, but it's nicer to give everybody the same even break. . . . New truck announcements which appear in this issue represent the latest to bear "official" release dates for January. . . . Others will be shown just as fast as the factories say "O.K."

●

### CHIEFS SCAN NEW MODELS



● Some ambitious photographer caught these three GMC executives admiring their new offspring—the first completed units of the new stream-styled series of General Motors Trucks for 1937. . . . Elsewhere in this issue you will find the complete story. . . . The job undergoing official scrutiny in this picture is the new 112-inch wheelbase, half-ton pick-up unit, featuring low price and all-steel "helmet-top". . . . The gentlemen in the picture are, left to right: I. B. Babcock, president; R. G. Emmert, vice-president in charge of manufacturing; and J. P. Little, vice-president in charge of sales.

●

### RUBBER PAINT

● We've heard many wise-cracks about so-called rubber paints but this month Pontiac's service department tells us that their organization is now distributing such a product. . . . The object? To protect the under-sides of fenders and sheet metal aprons against calcium chloride. . . . What's calcium chloride? A chemical which has come into popular use by municipal, county and state highway departments to melt ice and snow on streets and highways. . . . The rubber paint, we are informed, can be sprayed or brushed onto the under-sides of sheet metal parts, thus filling the pores of the finish and providing a surface which calcium chloride (a salt) will not attack. . . . Pontiac also points out that a paint of this type seals the filler strips between fenders and body where the calcium chloride usually seeps in and even-

(*Please turn over*)

●

H. Clay Fischer
Editor

●



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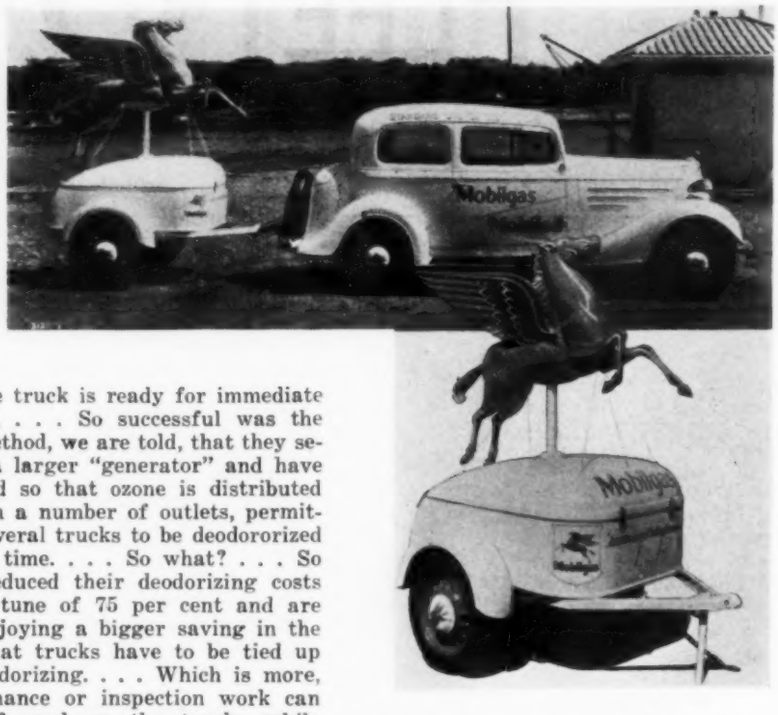
# The Editor's Column » »

(Continued from Page 17)



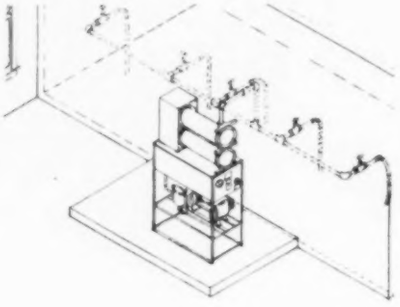

HORSE TAKES THE ROAD! . . . Mounted on a small trailer as shown here, the Flying Red Horse of Mobilgas has become a spectacular rolling billboard on New York highways. . . . Used by the Albany Branch of Standard Oil, this job has created considerable interest as a unique way of converting a trailer into an advertising medium. . . . The utility of the trailer is not impaired by the advertising matter and it will carry up to 1,200 pounds of material. . . . Glad to give you the trailer manufacturer's name and address, if you want it.—H. C. F.

tually does the most damage. . . . Your paint supplier ought to be able to tell you more about such a paint. Further than what we've told you, we do not know.

•

## SMELL ELIMINATOR

● "Ozone" is *not* something that we breathe when we get out in the open spaces of God's Country, as the colloquialists often put it. . . . Without getting technical, it is a gaseous substance that is generally produced electrically and enjoys many novel uses in industry. . . . What has that got to do with fleet operation? Simply this. . . . National Tea Company, we understand, is using ozone as a deodorizing and sterilizing agent in order to get rid of unwanted odors in food trucks. . . . Previously they used a slow chemical process, but now they are using a small portable "ozone generator." The procedure is as follows: The trucks are swept out, the floors of the bodies are dampened and the ozone generator is plugged into an electric circuit, placed in the truck body and the doors closed. At the end of the deodorizing period the doors are opened, the ozone is dissipated into the air and the truck is ready for immediate service. . . . So successful was the new method, we are told, that they secured a larger "generator" and have it piped so that ozone is distributed through a number of outlets, permitting several trucks to be deodororized at one time. . . . So what? . . . So they reduced their deodorizing costs to the tune of 75 per cent and are also enjoying a bigger saving in the time that trucks have to be tied up for deodorizing. . . . Which is more, maintenance or inspection work can be performed on the trucks while

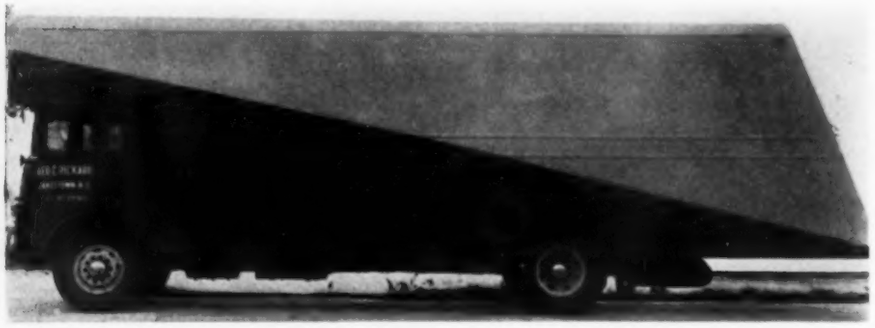


deodorizing. . . . Further details, if you want them, will be furnished by the Editor on request. . . . The drawing accompanying this shows the "generator" and the multiple hook-up as used by National Tea.

•

## I. C. C. REGULATIONS

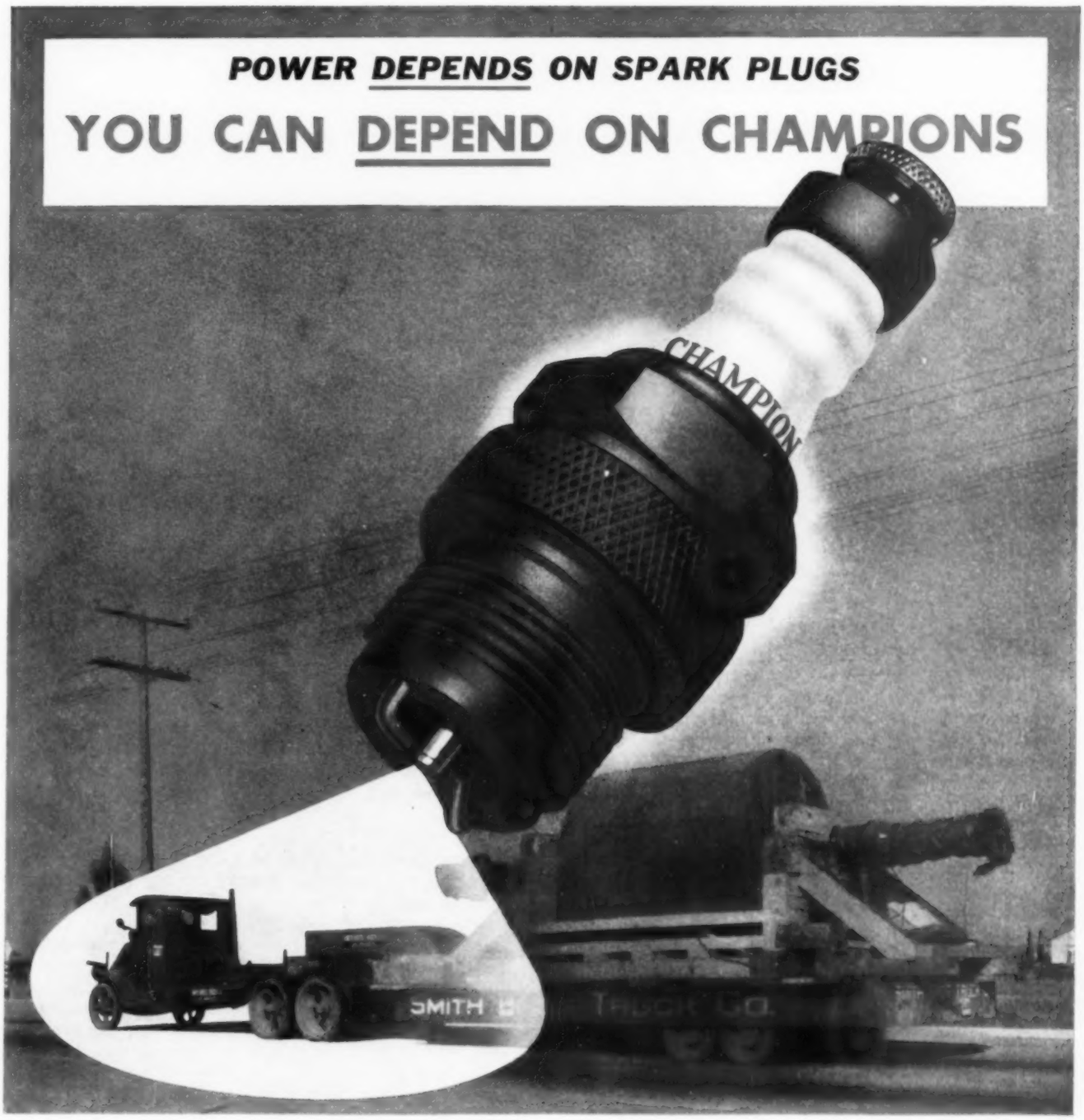
● Just as this issue was put to bed, along comes the Interstate Commerce Commission and passes some of those long-talked-about driver and safety regulations. . . . We couldn't find room for the complete text, but managed to steal this brief amount of space to give you a hazy idea of what has been done. A full report, of course, will appear in our next issue, but in the meantime here's something. . . . Exercising authority under the Motor Carrier Act, the ICC passed a set of regulations on December 30th. They are applicable only to for-hire carriers subject to the Act. . . . "Qualifications of Drivers" is the first of the new rulings, and includes certain requirements as to physical health, personal habits and obeyance of the basic rules of safe driving. . . . "Compulsory Accessories" includes a minimum list of safety equipment to be carried on each vehicle. Fire-extinguishers, spare lamp-bulbs, tire-chains, flares, red flags, etc., are a few. Lighting devices, clearance-lamps, adequate brakes, safety-glass, etc. are others. . . . The last section of the new regulations covers the reporting of accidents, which must be done within ten days of each accident. . . . The first two sections of the new ruling do not go into effect until July 1 of this year. The provision regarding reporting of accidents, however, is effective April 1, 1937.



VAN HAS NOVEL FEATURES. . . . This 210-inch wheelbase van body was built by Watkins on an Autocar chassis. The sloping back is designed to eliminate damage to goods caused by tailgate chains breaking; it also reduces wind resistance. The built-out compartment over the driver's head affords additional space and helps to distribute the load more evenly on the chassis. The paint-scheme is attractive and effective.

## POWER DEPENDS ON SPARK PLUGS

# YOU CAN DEPEND ON CHAMPIONS




*West's heaviest truck load drawn by Champion-equipped Great Goose-Neck Trailer-Truck. This frequency charger weighs 133 tons.*

**Power, dependable power, is the first requirement of the truck or bus operator. Power output is dependent to an extraordinary degree on spark plugs. Their design, quality, and condition may spell the difference between a good performing, economical and dependable engine and a sluggish, wasteful, unreliable one.**

**That is why Champion Spark Plugs are the choice of the majority of truck and bus operators; why the outstanding fleets of the nation depend on Champions exclusively.**

**The right type spark plugs, capable of meeting haulage problems resulting from type of load, topographical conditions and even climatic conditions, very often are the means of solving vexing cost problems. Champion engineers can help you choose the right spark plug for your particular operating conditions.**

**Your spark plug problems can be solved with Champions. Insist on them for greater power, economy and dependability.**

# CHAMPION

**EXTRA-RANGE SPARK PLUGS**

CHECK AND CLEAN SPARK PLUGS WHEN YOU CHANGE OIL

• A PORTION OF THE FLEET OUTSIDE THE GARAGE

## • A • SMALL • COAL • FLEET • OPERATOR •

# « MAINTENANCE

**EVEN in a small fleet you can reap big dividends with a well-planned maintenance program. . . . We think that Mr. Lyden has the situation well in hand. . . . What do YOU think?—H. C. F.**

MAINTENANCE, as applied to a fleet of trucks, covers a great many things, but from the shop angle we are concerned principally with the following operations:

1. Washing; 2. Lubrication; 3. Adjustments; 4. Minor Repairs and Replacements; 5. Major Repairs and Replacements; 6. Overhauling; 7. Rebuilding.

Whether or not a unit ever reaches the sixth or seventh operation depends on several factors, such as: first cost (inherent quality), its state of obsolescence, cost of replacement, etc. However if we neglect the first four points above, the odds are that the unit is going to need major repairs and will continue to need them until someone with an eye on operating costs cries to high Heaven, "Get rid of that jalopy!" These four points constitute what has come to be known as "Preventive Maintenance," at least, so far as our shop is concerned.

An analysis of the basic causes of truck failures shows that preventive maintenance can be practiced on the road as well as in the front office. But since this article started out to be a discussion of shop practices, we will pass the "theory" for the present; sufficient to say that the driver who knows his unit and selects the proper gear and engine speed for the job in hand is practicing preventive maintenance just as much as the mechanic, who by a careful engine tune-up seeks to minimize vibration and power waste. And the executive who selects a truck with a knowledge of the work it is to do and a realization of the qualities and limitations built into it is starting the ball down the proper groove.

We operate a fleet of ten trucks in retail coal service; six passenger cars operated by officials and employees are also cared for in our shop, in addition to the usual assortment of conveyors, fans, pumps, etc., found in a coal operation. Trucks vary in size from 1½ to 5-tons. Make is immaterial, since the procedure outlined would apply to practically any unit of this type. Ages range from two to thirteen years, the average being about seven. Our entire operation is in hilly territory and covers a radius of about fifteen miles.

Our shop policy is to do everything ourselves that we can economically do; therefore only radiator, major electrical and machine work are farmed out. Trucks are washed every week or ten days by one of the truck helpers, who also keeps the garage and shop clean. Our shop force consists of the writer only. During peak periods when all trucks are on the road from ten to twelve hours a day, practically all service work must be done at night.

No printed forms are used in connection with shop

• 1930 FORD WITH ALUMINUM BODY

• PART OF THE SHOP AND THE "SHOP FORCE"

## • GIVES • YOU • AN • OUTLINE • OF • HIS •

# MINISTRATION »

By John L. Lyden,
*Maintenance Superintendent,*
*The Phillips Brothers Coal Company,*
*Pittsburgh, Pa.*

practice; however, three records are regularly kept on each truck. The first is a maintenance record, reproduced on page 22, which shows the date when each item of maintenance has been taken care of. The second, or repair record, also illustrated, shows the date and mileage of each particular repair or replacement and its cost; also a brief note of the condition of each part or unit of the truck at such time. The third is simply a note of any work to be taken care of at the first opportunity. A separate sheet is kept for each truck, and is merely ruled up and headed on any convenient tabulating or other available paper. The repair record, if kept and filed regularly, is an invaluable aid in determining the probable condition or efficiency of any particular unit at any time.

Lubrication, in our opinion, is the first step toward successful maintenance in any fleet operation and it is the foundation of our set-up. All the trucks in our care (also passenger cars when it is possible to pry them loose from their drivers for the necessary time) are lubricated regularly and thoroughly. The time intervals between lubrication jobs vary with weather and business conditions, wet sloppy weather requiring more frequent greasing. In general, 500 to 800 miles or a time interval of three weeks is set as a maximum between lubrication jobs.

The procedure at each period is to grease and check the unit at the same time. Shackles, steering knuckles, steering gears and all similar parts are lubricated with a good grade of extreme pressure gear oil. Weight is taken off each part while this is done and the oil is forced to all working surfaces. Universal joints are kept filled with the same lubricant or with a good universal joint grease, depending on the type of joint.

Brake-shafts and pins, control rods, hood hooks and hinges, door-latches and hinges, generators, starters, distributor shafts, and all working parts not equipped with grease connections are lubricated with motor oil. Distributor cams are touched with vaseline or a drop of motor oil as the case may be. Fans are lubricated with motor oil or E. P., according to their construction.

Water pump and fan assemblies having but one grease connection are kept filled with smooth type wheel bearing grease. Water pumps requiring water pump grease only are checked, but are lubricated daily by the driver when he checks water and motor oil. Transmissions and rear axles are checked for oil-level and leakage.

Crankcases are checked and drained when condition of the oil seems to require it. In general this is

(*Please turn to page* 22)

• 1933 GMC — A RECENT ADDITION

advisable at about 500 miles in our operation, except on trucks equipped with up-to-date oil filters. These are run in some cases 15,000 miles or more without draining, filter cartridges being replaced as necessary.

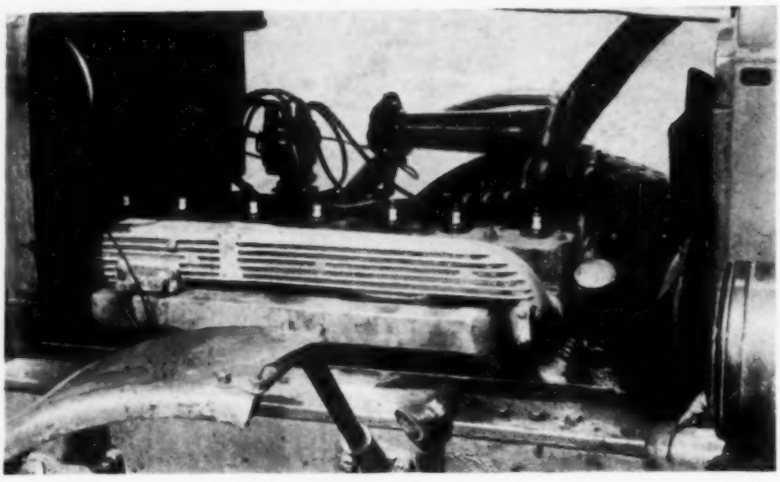
To sum up, every part where friction or wear occurs is given a liberal dose of its favorite lubricant, with the exception of spring leaves, which are *never* lubricated.

During this grease and oil-slinging operation, everything on the truck that can be checked externally is given the once-over. Steering and front-end are checked for looseness, universals, wheel bearings, pinion or worm shafts, transmission shafts, etc., are given a quick check for excessive play. The condition of engine support bolts, spring U-bolts, rim or wheel nuts, driving flange studs, etc., is noted. Pumps, fans, distributor points and fan belts are checked. Lights, horns, windshield wipers, brake fluid and clutch pedal clearances are given a quick look-over and the general condition of everything is noted. Any trouble discovered is remedied at once if time permits, or if not serious, is marked for attention at the first opportunity. As a last resort, the truck is held out of service at least long enough to make a safe repair.

Every second or third lubrication-inspection period each unit is road-tested for brakes, steering and power and is also given a tune-up in the shop, including cleaning and testing of plugs and wiring, testing compression, and checking valve clearances and fuel strainers.

In addition to the foregong, drivers are asked to report anything which they may notice that affects the operation of the truck, also any especially rough usage it may encounter.

Headlights are carefully focused and aligned at each State inspection period and meanwhile are given no special attention other than replacing bulbs, unless they show evidence of being bumped or otherwise misaligned. The same applies to front wheel and axle alignment.



HERE is a good example of modernization. The engine you are looking at is an 8-cylinder Lycoming AEC job, which develops 130 h.p. at 2,800 r.p.m. . . . It was installed in this truck chassis, replacing a BTU Buda, which, in case you forgot, is a 4-cylinder job, 5" x 6½" bore and stroke. . . . The results claimed by the author of this article are "Smoother operation, plenty of speed and power, a 15% saving in fuel, a 50% saving in oil, and a tonnage increase of 10%."—Editor.

Batteries are checked every ten to fourteen days for water level, corrosion and tightness of clamps and terminals, and for leakage around cell tops. Gravity and generator charging rate are checked also about every month or two. Medium-priced batteries of standard manufacture are used and no attempt is made to repair them after a year's service. The average life of such batteries in our service is about 24 months.

Cooling systems are flushed three or four times a year and are given a mechanical cleaning once a year if construction permits, otherwise when the engine is disassembled. Radiators are sent out for cleaning and check-up at least once in two years. Two to four ounces of potassium chromate or dichromate is used in each unit as a rust inhibitor. No antifreeze is used, as our engines are kept running at all times during cold weather while out of the garage. Radiator covers are used as needed to maintain efficient operating temperatures.

Brakes are relined at any time as the occasion requires, advantage usually being taken of slack periods for this job. Heavy-duty moulded lining is used throughout, with the exception of one unit on which it is necessary to use compressed woven lining to get the necessary friction. Average life of a set of lining seems to be about 20,000 miles, although one job at present has gone over 40,000 miles on a set. Cast iron drums are used exclusively and the best of them give 75,000 miles. We find that turning them down and using an oversize lining works perfectly. Care must be taken, however, to leave enough material to avoid any chance of weak-

(*Please turn to page* 24)

PHILLIPS BROS. COAL CO.

Truck No..... MAINTENANCE RECORD 1936 Make.....

| Item | Date or Mileage |
|---|---|
| Wash | 1/6 - 1/20 - 2/6 - 2/20 - 3/6 - 3/20 - 4/6 - 4/20 |
| Grease | 1/6 - 1/20 - 2/6 - 2/20 - 3/6 - 3/20 - 4/6 |
| Oil Change | 1/6 - 2/6 - 3/6 - 4/6 |
| Filter Cartridge | 4/6 |
| Engine Tune-Up | 1/6 - 3/6 |
| New Spark Plugs | |
| New Points & Cond. | 3/6 - A.A. exp. |
| New H T Wiring | |
| Fuel Pump O/H | |
| Carburetor CL & CK | |
| Pump Packed | |
| Radiator Flushed | 3/6 |
| Block Cleaned | |
| W/S Wiper Rep-Repl. | |
| Generator Check | 3/20 |
| Battery & L T Wire | 3/6 - |
| Clutch Adjusted | |
| Front End Check | 3/6 |
| Steering Adjusted | |
| Wheel Brgs. CK & GR | 3/6 - 4/20 |
| Brakes Adjusted | 3/20 - Relined |
| Brake Fluid Added | |
| Brake Fluid Repl. | 3/6 |
| Hydr. System O/H | 3/6 |
| Booster Cyl. Oiled | |
| Tires Inspected | 3/20 All 4 |
| Head Lamps Checked | |

This "home-made" truck "Maintenance Record" form is one of the two used in this fleet. One sheet is used per truck, per year. . . . It shows the date each item of maintenance was taken care of. . . . The other form used is shown on the following reading page, if you care to turn over.—H. C. F.

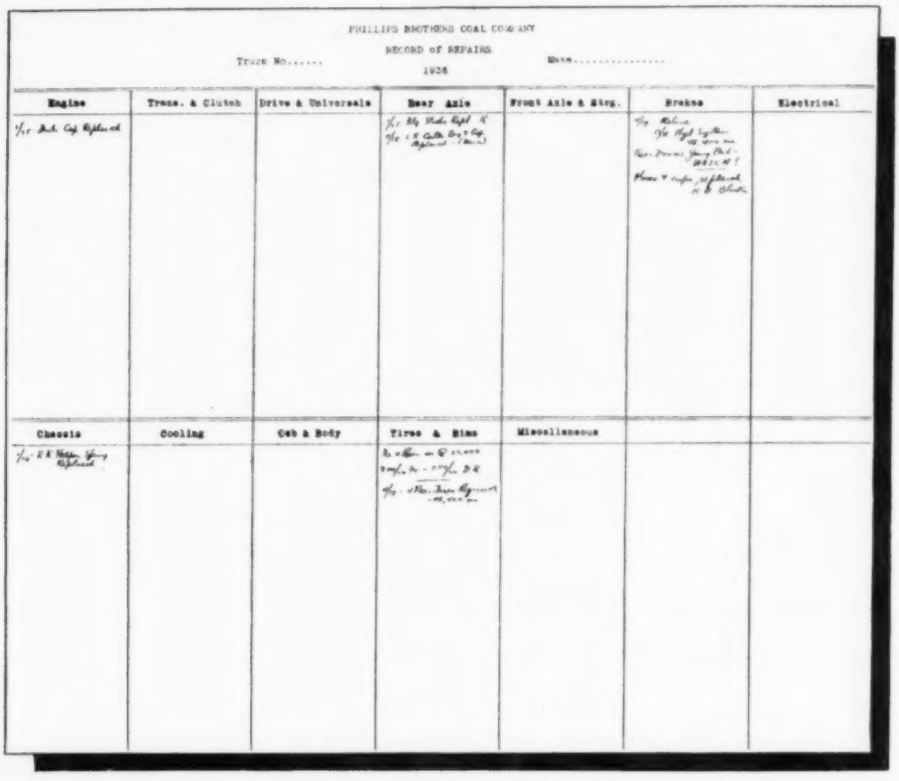
# *End your* BRAKING PROBLEMS WITH GENUINE WESTINGHOUSE AIR BRAKES

Here is a consistently dependable brake control recognized as standard equipment for the lightest to the heaviest motor transport vehicle by the world's foremost operators and manufacturers • To them, genuine Westinghouse Air Brakes represent the perfect solution to their braking problems as well as the ultimate in safety and a definite economic advantage in the swift, efficient movement of modern commercial units • Let genuine Westinghouse Air Brakes prove their many exclusive advantages in the solution of your braking problems • Write for information.

**AS LOW AS $139.00 INSTALLED IN U. S. A.**

**BENDIX-WESTINGHOUSE AUTOMOTIVE AIR BRAKE COMPANY • PITTSBURGH, PENNA.**

# A "HOW-WE-DO-IT" SHOP ARTICLE (Continued)



PHILLIPS BROTHERS COAL COMPANY

RECORD of REPAIRS

Truck No.....  Make.....

1926

| Engine | Trans. & Clutch | Drive & Universals | Rear Axle | Front Axle & Strg. | Brakes | Electrical |
|---|---|---|---|---|---|---|
| | | | | | | |

| Chassis | Cooling | Cab & Body | Tires & Rims | Miscellaneous | | |
|---|---|---|---|---|---|---|
| | | | | | | |

HERE is the "Repair Record" which shows the date and/or mileage of each particular repair or replacement, and also a brief note of the condition of each part or unit of the truck at such time. . . . A separate sheet is kept for each truck, each year. . . . The author feels that in a small fleet this type of record, if kept and filled out regularly, is an invaluable aid in determining the probable condition or efficiency of any particular unit at any particular time.—Editor.

ening the drum to the point of allowing distortion.

Transmissions and rear axles are drained and refilled twice yearly, at which time all gears, bearings and adjustments are checked as far as possible without complete dismantling. Extreme-Pressure gear oil is used in both, SAE 160 being used in summer and SAE 110 in winter. In this connection I might say that we have three worm-drives in which we have been using this same E. P. for four years or more. All show less wear than with any lubricant previously used. I mention this fact because I understand it is sometimes against engineering advice.

Wheel bearings are cleaned and lubricated twice yearly, although in some cases attention is required more frequently. They are also watched closely at greasing and inspection periods.

Balloon tires are used as far as possible and oversizes are applied wherever practical. While some attempt has been made to standardize on rims and tires in our fleet, it has been pretty much a failure, with us. Since our radius of operation is short, no spare tires are carried on the trucks; spares for all jobs, however, are kept ready at the garage.

Only first-line tires of standard manufacture are purchased. Tires showing breaks or cuts are sent to the manufacturer's branch for repairs whenever the remaining mileage warrants the cost. Lately we have been regrooving rear tires when the treads become smooth, this work also being done by the tire manufacturer. All tires reaching the final bald-headed stage with carcasses intact are retreaded, again the business going to the tire manufacturer. Tires not considered suitable for retreading are placed on a rear dual position and run ragged.

No tire with a break, badly worn tread or otherwise doubtful is used on the front of any vehicle; retreads are considered safe for front wheels in our operation, although we operate at fairly high speeds for short distances. As far as possible, bad tires are run out in good weather and an attempt made to keep tires with good treads on rear positions during the winter months. All trucks are furnished with chains at the beginning of bad weather and drivers are instructed to use them whenever necessary.

Our business being largely domestic fuel, the period from about April 15th to July 15th is the time when necessary major repairs are undertaken. As soon as business conditions permit, trucks scheduled for repairs are taken into the garage one at a time. Knowledge of the way the truck has been performing and the work done on it in the past, together with a careful inspection, including complete dismantling of all doubtful units enables us to decide what should be done to assure, as far as possible, another year or more of economical operation.

Nothing is passed at this time that would mean an extensive and costly tie-up during the following busy season; for any saving that might be effected by squeezing the last remaining miles out of a doubtful

(*Please turn to page* 70)

# THIS IS WHAT MAKES A *Great Truck Even Greater*

To produce the 1937 Marmon-Herrington all-wheel-drive Ford V-8 truck, Marmon-Herrington engineers and craftsmen do these four things:

***First*** – Install a driving front axle *in the Marmon-Herrington factory.*

***Second*** – Install a two-speed auxiliary transmission *in the Marmon-Herrington factory.*

***Third*** – Install all other parts (such as semi-elliptic front springs) necessary to completely "convert" the standard Ford V-8 truck into a genuine all-wheel-drive *in the Marmon-Herrington factory.*

***Fourth*** – Take every unit, as it comes off the assembly line, and test it thoroughly under every conceivable condition to make sure it has a greater degree of performance, safety and economy than any other all-wheel-drive truck ever offered *at anywhere near the price.*

## MODELS AVAILABLE FOR 1937

Model C5-4 (four wheels driving, 6 tires) wheelbase 132 inches.
Model C5A-4 (four wheels driving, 6 tires) wheelbase 112 inches.
Model C5B-4 (four wheels driving, 6 tires) wheelbase 122 inches.
Model C6-4 (four wheels driving, 6 tires) wheelbase 157½ inches.
Model LD1-4 (four wheels driving, 4 tires) wheelbase 113½ inches.
Model C5-6 (six wheels driving, 10 tires) wheelbase 154 inches.
Model C6-6 (six wheels driving, 10 tires) wheelbase 179 inches.

*Maximum gross capacities, 13,200 pounds for four-wheel-drive models; 22,000 pounds for six-wheel-drive models.*

## ALL-WHEEL-DRIVE PERFORMANCE PLUS VOLUME PRODUCTION VALUE

THE Marmon-Herrington all-wheel-drive Ford V-8 for 1937 is the lowest priced completely engineered truck, driving through EVERY WHEEL, ever designed or built. Indeed, its cost is so reasonable that a truck owner or operator can purchase TWO of these vehicles for the price he ordinarily would expect to pay for ONE genuine all-wheel-drive. No matter what your transportation requirement may be, it will pay to investigate thoroughly the possibilities of the Marmon-Herrington all-wheel-drive Ford V-8 as applied to your own problems. Full details and prices will be sent on request.

**MARMON-HERRINGTON CO., Inc., Gen. Offices: Indianapolis, Ind.**

# MARMON-HERRINGTON
# *All-Wheel-Drive* FORD V-8

# Harvard Brewery Has a Simple Record-System»

**TWO printed forms and Servis Recorder charts form the basis of a simple system that takes care of the WORK done by Lowell, Massachusetts, brewery fleet. . . . Costs and other operating data are handled on other forms.**

By Ed. Hunger

The three record forms which are used to supply route, load, time, and mileage data for Harvard Brewery's simple system of records.

THE Harvard Brewing Company, Lowell, Mass., has developed a simplified system for recording data on the use of its motor trucks. The trucks are employed entirely for hauling draught beer in Lowell, Boston, and Worcester. Long-distance deliveries are made by contract hauler and go all over New England and even into Canada. Case goods are handled by jobbers who get their supplies at the brewery shipping platform.

All the trucks are of 2 to 3-ton rating and equipped with stake bodies. They are painted a flaming red with black fenders and yellow wheels. Lettering is white except that on a big signboard back of the cab, which is red on a background of white. The name "Harvard" is printed in a distinctive script. The trade-mark, the Harvard seal, is also reproduced on the side of each truck.

Two of the trucks are operated on regular routes in Lowell, six in Boston, and one in Worcester. Continually on the go daily in these three cities with their big loads as shown in an accompanying illustration, these conspicuously finished motor trucks are wonderful advertisers for Harvard beer, ale, and porter. The truck shown, a recently purchased streamlined model, is one of eight Internationals operated by the Harvard Brewing Company.

Two forms are used to keep track of the work done by each truck. Form No. 10, which is 9 by 12 inches in size and has been devised for recording various details on each driver's load, is reproduced in an accompanying illustration. It is made in triplicate—the first, a white copy, being for the driver; the second, a pink sheet with federal stamps affixed thereto, for the shipping department; and the third, a yellow sheet, for the accounting department.

On the back of each of these sheets are columns for recording information on each delivery as follows: Delivery number, brand, delivered (barrel, half-barrel, quarter-barrel), gross charge, empties (barrel, half-barrel, quarter-barrel), deposit credit, cash check charge, and account for.

Another form, 5 by 9 inches in size (also reproduced) is the weekly mileage and time report with the dictum below as shown that all accidents and mechanical trouble should be recorded in detail on the reverse side.

Various cost and operating data are summarized on a weekly summary sheet and from these data costs per stop, per mile, per hour, and per one-half barrel of beer are periodically figured. Columns on this weekly summary sheet are as follows: truck number, hours, miles, stops, cost (truck, labor), total cost, total load, halves delivered, halves returned, per cent of payload, and cost per half.

Another worth-while method of accumulating information on the daily operation of each Harvard Brewery truck is by means of Servis Recorders, a

(*Please turn to page* 71)

A typical Harvard Brewery truck at work. Because 75 per cent of their output is draught beer, body equipment such as shown here is used mostly.

# TAKE A TIP FROM MEN IN YOUR BUSINESS

## *Facts prove you should change to Sovac Oil*

**Read how the Fleet Supt. of Bauman Fuel Co. saved 50% on his Oil Bill with Sovac Oils**

● **The Bauman Fuel Company is located in Milwaukee, Wisconsin (they get plenty of cold weather out there). It runs a fleet of 16 trucks in city delivery service. The superintendent says:**

**"I have used Sovac in our 16 units since May last year. My former winter engine troubles seemed not to occur this winter at all.**

**"We were always troubled with gummy valves and a lot of carbon. We experienced bad cylinder wear, too. Sovac seems to have completely ended these winter troubles and expense.**

***"Sovac has cut our oil bills squarely in half.* Sovac lasts longer and we don't need to add oil between changes."**

"I'LL BUY ANYTHING, if first you'll *prove* it'll make me money," said a fleet operator to a Socony-Vacuum Fleet Engineer.

He was talking to the right man. For Socony-Vacuum's men are specifically instructed to solicit business on the basis of proving every claim made.

The proof comes from men who are in your business. It's in the form of actual performance records—savings made by Sovac Oils in service!

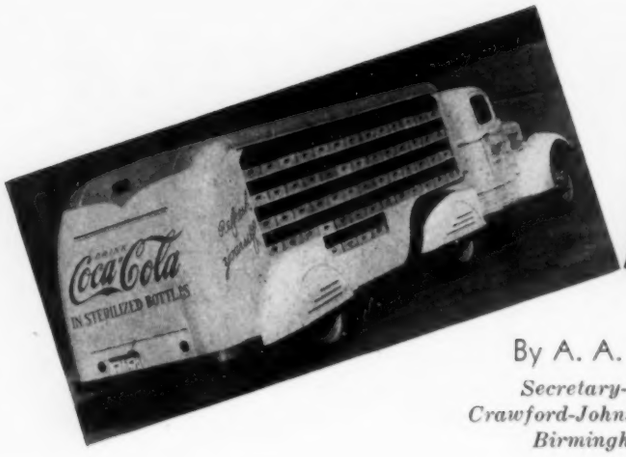
For instance—did you realize Sovac Oils have reduced gasoline consumption as much as 15%?

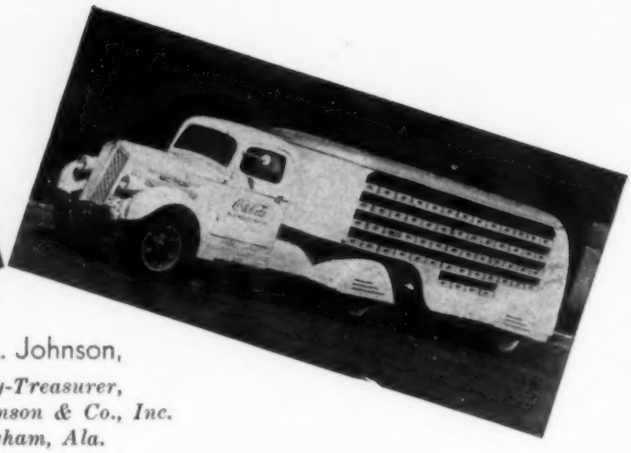
Ask to see "Proof—the Sovac Economy Story." It's a book of facts—the kind you need to make correct decisions on lubricants. It shows you how the Clearosol Process refines a new kind of fleet motor oil. It *proves* this oil can save you money.

**SOCONY-VACUUM OIL CO., INC.**

STANDARD OIL OF NEW YORK DIVISION · WHITE STAR DIVISION · LUBRITE DIVISION · WHITE EAGLE DIVISION
WADHAMS OIL COMPANY · MAGNOLIA PETROLEUM COMPANY · GENERAL PETROLEUM CORPORATION OF CALIFORNIA

SOCONY-VACUUM



By A. A. Johnson,

*Secretary-Treasurer,*
*Crawford-Johnson & Co., Inc.*
*Birmingham, Ala.*

# Modernizing a Bottled-Goods Truck Fleet

OUR Company, Crawford Johnson & Co., Inc., is engaged in the manufacture and distribution of bottled Coca-Cola. All of our deliveries, of course, are made by truck.

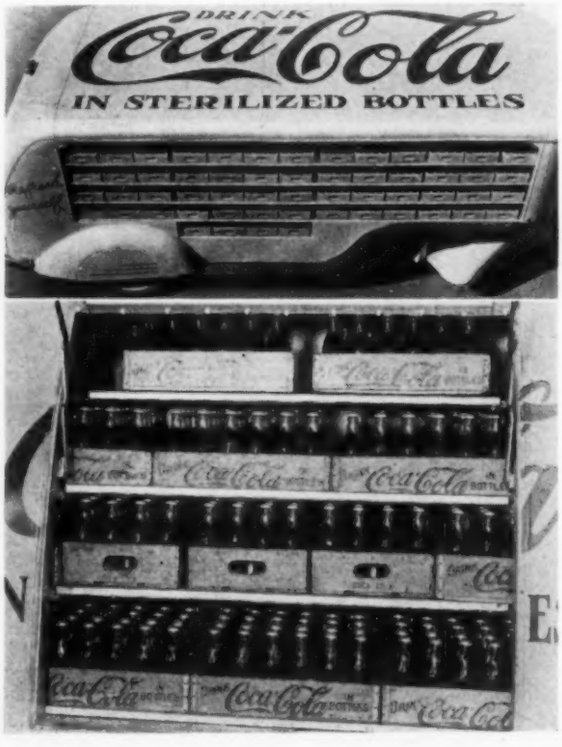
We had been considering for some time replacing some of our larger and older units with new equipment. In this change-over we considered four factors: First, practicability; second, pleasing appearance; third, advertising possibilities for our product; and fourth, tonnage capacity of the unit in question.

We had previously been using some rather old and cumbersome equipment, and were carrying about 300 cases. I might say in explanation that these cases of Coca-Cola are of wood, and weigh, loaded, around 37 pounds each.

We then purchased three Model 704 White chasses, 136-inch wheelbase, with Fruehauf trailers to be used with them. With this combination we have a ten-wheel job with dual wheels at the end of the tractor and dual wheels at the end of the trailer. All the tires are the same size, viz., 7.00-20, which makes them interchangeable all around.

Our next step was to have built a streamlined body, and at the same time to try to get enough capacity to offset whatever loss we had from the old equipment. We did this and were able to get space for 260 cases on the body. Although we lost some 40 cases due to using a deck body, our product can be worked off this truck more quickly than formerly, and, of course, the truck can be maneuvered more easily and, naturally, will run faster. This enables the driver to work his route and return to the plant for a new load more quickly than he was able to do with his old equipment.

The upper left-hand picture shows a view of one of these units from the rear, and gives you a very good idea as to how we have used the rear end of the truck for prominently displaying our trade-mark. In this connection, you will notice that the door-handle is directly above the license plate. This door opens upwards, and as you can see from the close-up view at the bottom of this page, we can place in the rear compartment some 30-odd cases, stacked on shelves, as shown. These shelves are bolted to the body and can be taken out whenever we need this space for something else.




Our idea in designing this rear compartment was to provide a closed-in space in which we could carry around at any or all times one of our Coca-Cola ice-boxes, which are sold to retailers of this popular drink. By carrying such ice-boxes in the rear compartment, it is completely protected, yet instantly available at all times for demonstration. Perhaps this idea will appeal particularly to other companies engaged in the distribution of bottled goods.

The upper right-hand picture shows a front-side view of the unit. Although it might appear to be painted white in this photograph, it's really painted yellow all-over, with trademark and lettering in red. This, of course, is the standard color combination of the Coca Cola Company.

The roof-view picture,

(*Please turn to page* 73)

# "An average increase of 20% on gasoline mileage"

**MILLER TRANSPORTATION**
*6524 Lankershim Boulevard • Los Angeles, California*

Los Angeles, Calif.
September 22, 1936

va[illegible] Petroleum Company
3800 Chandler Boulevard
Burbank, California

Attention: Mr. Yentis

Dear Mr. Yentis:

Some three years ago when you described to us the advantages of Ring-free, we felt that your claims might be somewhat exaggerated. But in using it since that time, it has really fully lived up to your representations, and we feel that you would be interested in results we have noticed.

In two trucks equipped with Cummins Diesel Engines, both Model HA - 125 H.P., 6 cylinder units - Ring-free has completely eliminated carbon trouble which had been previously caused by other oils. This is true also of a large White unit which had given us trouble from excessive carbon formations and sticky rings.

All of the above is remarkable but the ability of Ring-free to increase gasoline mileage through reducing friction in gasoline motors has amazed us. Our best example is that of a Sterling. Using a high-priced oil, we averaged 3½ miles per gallon of gasoline with occasional carbon trouble. Immediately after changing to Ring-free, this truck has averaged from 4 to 4½ miles per gallon - an increase that will average close to 20% on gasoline mileage as compared to other oil. In addition, of course, we have had no carbon troubles on this truck either since putting in Ring-free.

Yours very truly,

MILLER TRANSPORTATION

By George A. Kulmus

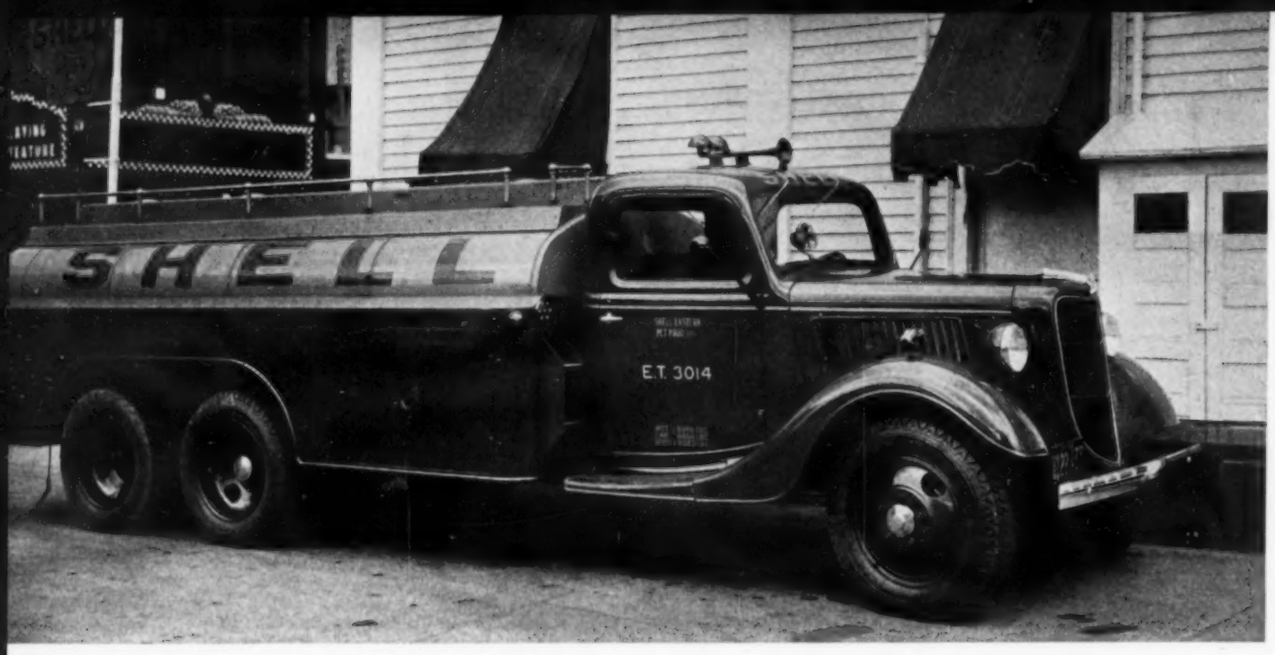
## MACMILLAN RING-FREE MOTOR OIL

1. GREATER FILM STRENGTH
2. HIGHER HEAT RESISTANCE
3. LONGER CLING TO METAL
4. FASTER PENETRATION
5. REMOVES HARD CARBON
6. IS NOT CORROSIVE

You can't blame the fleet operator for being skeptical of sales claims for motor oils. His trucks cost a lot of money. He wants to KNOW accurately what an oil will do. The Macmillan performance tests prove quickly and exactly what any oil will do in operation. Your local Macmillan Man is anxious to show you how to compare qualities of lubricating oils.

**Macmillan Petroleum Corporation, 530 West Sixth Street, Los Angeles, California, or El Dorado, Arkansas.**

MEET THE MACMILLAN MAN — LET HIM PROVE HIS CASE




# Light 6-Wheelers Adopted by Shell

**CHEVROLET, DODGE, FORD and GMC 1½-ton units are used. . . . They are equipped with 2-speed axles, six-wheel-units and many safety devices. . . . Officials report a reduction of about 30 per cent in cost-per-mile, with a rise of 20 per cent in carrying capacity. . . . Here are complete details:**

AS the result of many experiments conducted during the past two years by officials of Shell Petroleum, under the direction of Capt. G. E. Gray, Automotive Manager, a new fleet of 16 light six-wheel units has recently been put into service, for which remarkable economies are claimed, along with an actual increase in carrying capacity. Low-bodied, 1,200-gallon tanks are mounted on each of these new jobs.

These units are constructed on standard 1½-ton Chevrolet, Dodge, Ford and G.M.C. chasses and are equipped with Eaton 2-speed power axles which give them a top speed of 40 m.p.h., and a hill-climbing speed, still in direct drive, of 30 m.p.h. This results in a rise of about 10 m.p.h. in average speed, over the trucks replaced.

Along with this noticeable increase in speed capacities the newly purchased fleet gains approximately a 30 percent reduction in cost per mile, with a rise of 20 percent in carrying capacity, it is claimed.

Such betterments are achieved by several factors: the use of light, high tensile steel; engines of higher speeds and higher compressions; and the adoption of a lighter chassis, made practical by the use of a third axle. In all models this is either of two popular units, both makes having been found to afford remarkably easy riding combined with low maintenance costs and excellent traction, it is pointed out by Company officials.

The light weight of the new units—only 4,400 lbs. to a wheel—makes for flexible operation and eliminates any possibility of damage to driveways.

Both gasoline and fuel oil distributors have exhibited considerable interest in the specifications and performance of these somewhat different delivery trucks.

Every one of these new trucks is equipped with many safety devices and has several unusual features, developed as a result of Shell's operating experience in transportation. Speed, safety, comfort, convenience and cleanliness in the delivery of fuels and supplies were the features desired.

The catwalk and safety rail atop the tank, the refrigerator-tight side-boxes (to insure delivery of canned oil, maps, bulletins, etcetera, in clean condition), and the safety lighting features on front, rear and sides are among the Shell-developed features now adopted as standard on forthcoming equipment.

The catwalk rail, incidentally, is one of those improvements that has to be tried to be appreciated.

Almost everybody who took a look at the first units to be thus fitted had the offhand opinion that a rail along the narrow platform would be more apt to trip the unwary tank walker than help him to keep his footing. (Editor's Note: This feature was described in detail on page 18 of the August, 1936 issue of FLEET OWNER.)

But drivers and dealers who have climbed the new trucks think differently, for it was found by actual tests that the rail gave considerable steadiness to the movements of anyone inspecting compartments.

Maximum height of the tankshells on the new models is only 6 ft. from the ground, making for greater stability on the road. When traveling loaded at 20 m.p.h. they can be stopped within a distance of 20

(*Please turn to page* 73)

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**HERE is a new type of truck used by one of Shell's distributors. It's a 2-ton Studebaker "cab forward" job for which easy handling is claimed on account of the short wheelbase. . . . This picture is included just to balance the page; it has nothing to do with the accompanying article.—Editor.**

# MORE TRIPS PER DAY AT LOWER COST PER LOAD

1 Fleet of ten Ruckstell-equipped trucks with hydraulic dump bodies in service of Tri-State Sand & Gravel Company, Lexington, Mississippi.

2 One of many Ruckstell-equipped dump trucks used by the Utah Construction Company, Salt Lake City, Utah.

3 Ruckstell-equipped trucks owned by Michigan Alkali Co., Wyandotte, Mich.

4 Dump truck equipped with Ruckstell 2-Speed Axle hauling crushed stone for Martin Sunkas, Los Angeles, California.

5 New fleet of ten Ruckstell-equipped dump trucks ready for delivery to Dorman & Moran, Inc., Jamaica, N. Y.

Road building and construction work will tear out the guts of any dump truck. Backing, pulling out, bucking, frogging out of bad holes, up and down steep grades with heavy loads, burning up motors when returning empty at top speed—terrific wallops that every dump truck must take on the proving ground of actual service.

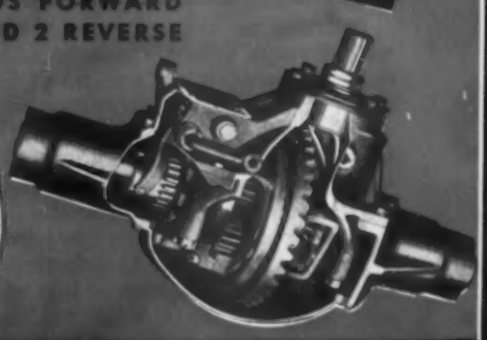
Work of this type requires a sturdy axle of unusual flexibility—an axle that offers speeds lower than normal low, higher than normal high, with a correct gear ratio for every road and load condition. Only the Eaton Ruckstell 2-Speed Axle meets these requirements satisfactorily.

The Ruckstell Axle starts heaviest loads smoothly. Reduces shock to driving parts. Gives more profitable speed . . . with slower motor turnover when speeding back empty. Prolongs engine life. Reduces gas, oil, and repair bills. Increases profits, say hundreds of contractors.

The Ruckstell 2-Speed Axle is made for every make and type of truck from 1½ ton capacity, up. Send for interesting booklet!

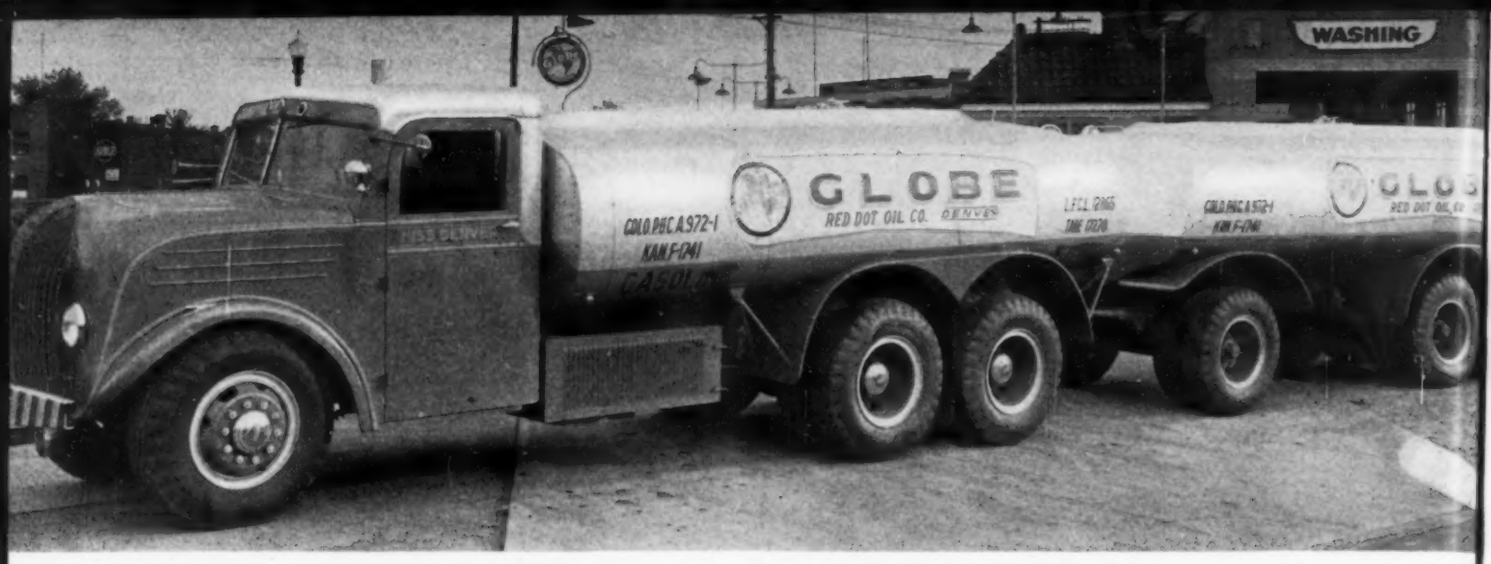
**EATON MANUFACTURING COMPANY**
**CLEVELAND, OHIO**

**8 SPEEDS FORWARD ... AND 2 REVERSE**



POWER WHEN YOU NEED IT
SPEED WHEN YOU WANT IT

# EATON 2 Ruckstell SPEED AXLE




Here is a close-up of the interesting unit described in this article. It has so many unusual features that we are sure every fleet operator will find it well worth his while to read the complete description we have made.—H. C. F.

# New Diesel-Powered Unit Features:-

- *Air-Conditioned Cab*
- *Novel Sleeper Compartment*
- *Latest Diesel Engine*
- *Interesting Muffler Job*
- *High-Tensile Steel Tanks*

MODERN refinements in truck and trailer construction are admirably demonstrated in this interesting gasoline transport combination, the first of four new units purchased by the Cunningham Oil Transport Company of La Junta, Colorado for the transportation of gasoline between Kansas refineries and the larger cities in Colorado.

The operating schedule calls for a round trip of 1,000 miles in 36 hours. Leaving Denver at 6 P.M., the unit arrives at the refinery at 9 A.M. the following morning, consumes about an hour for loading and servicing, and makes the return trip, arriving at 6 A.M. the next morning.

In addition to a number of detail improvements such as seats mounted on spring steel to minimize driver fatigue, special mountings of tachometer and air-brake dials at the most convenient position for the driver's observation and a specially constructed bed in the cab for the spare driver, the entire cab is air-conditioned, to provide a maximum degree of comfort and protection for the driver during extremes of weather and through dust-storms which are often encountered.

The truck and trailer with payload have a combined gross weight of 68,000 pounds which is the heaviest weight permitted for trucking units in most Western states. The overall length of the truck and trailer is 49 feet—the truck is 24 feet, the trailer 20 feet and 5 feet for the connecting tongue. The width is 7 feet 11 inches and the height is 7 feet.

In traveling over ordinary roads with average hills, there is no difficulty in maintaining a speed of 50 miles per hour. A maximum speed of 60 miles per hour can be obtained without over-speeding the engine, it is stated.

Air-conditioning is not used with gasoline-powered trucks by this operator who believes that harmful gases make it dangerous to insulate and seal the cab tightly so that air-conditioning will be efficient. But by utilizing a Diesel engine, he believes it is possible to safely insulate the cab with Master Metal and Rock Wool without any danger from poisonous gases.

A close-up of the novel sleeper-cab design, showing how the driver sleeps fore-and-aft in a "pullman" type berth.

The air-conditioning unit is entirely separate from the motive power and consists of a small gasoline engine which drives a two-cylinder compressor. The tank for this engine holds three gallons of gasoline which will run it for twenty-four hours, or enough to make a 1,000 mile trip. This equipment is located in the box on the left-hand side of the truck behind the cab.

Sulphur gas is used for the cooling element, just as in many types of mechanical refrigerators. The coils, through which the gas circulates to cool the air, are located between the seats of the driver and rider at the back of the cab. The coils are neatly housed and only extend out three inches, running from the floor to the top of the cab. Next to the floor is an opening through which a Sirocco Fan pulls the air off of the floor and over the coils to the top of the cab, where the cool air is blown out through a grille. The temperature of the cab is set at 74 degrees and the fan automatically starts or stops if the temperature runs above or below this point.

The cooling condensers are located on either side of the truck, one being in a vertical position on the outside of the box containing the compressor, and the other beneath the box carrying the first-aid equipment which is on the

(*Please turn to page* 34)

# HOW FOOD HAULER CUTS TIRE COSTS!

## NO TIRE DELAYS WITH NEW TRIPLE PROTECTED SILVERTOWNS

What a relief to eliminate tire delays! That's what the C. Rice Packing Company of Covington, Ky., did when they changed to Goodrich Triple Protected Silvertowns.

Their five big trucks are always on the go. Yet they haven't had a single delay with this new tire! Mileage has increased. Repair costs have dropped.

Wouldn't you like to cut down on delays? Put an end to sidewall breaks? Keep deliveries on time? Travel your trucks faster with safety? Hundreds of operators tell us they are getting just such results with Triple Protected Truck Tires.

It's easy to see why. Eighty per cent of premature failures occur in the sidewall —the "Failure Zone." And Goodrich gives you the only tire that has Triple Protection at that point! This new invention is designed to stop sidewall blow-outs before they start. It gets right at the root of truck tire troubles.

### Costs No More

Every tire with Triple Protection costs more to build. It's an expensive development. But it does not cost you one thin dime extra. Goodrich Silvertowns are priced the same as other standard truck tires. Call the nearest Goodrich dealer. Ask him to tell you the whole money-saving story.

### HOW TRIPLE PROTECTION WORKS

**1 PLYFLEX**—a new, tough, sturdy rubber material with greater resistance to stretch. A layer of Plyflex in the sidewall prevents ply separation—distributes stresses — checks local weakness.

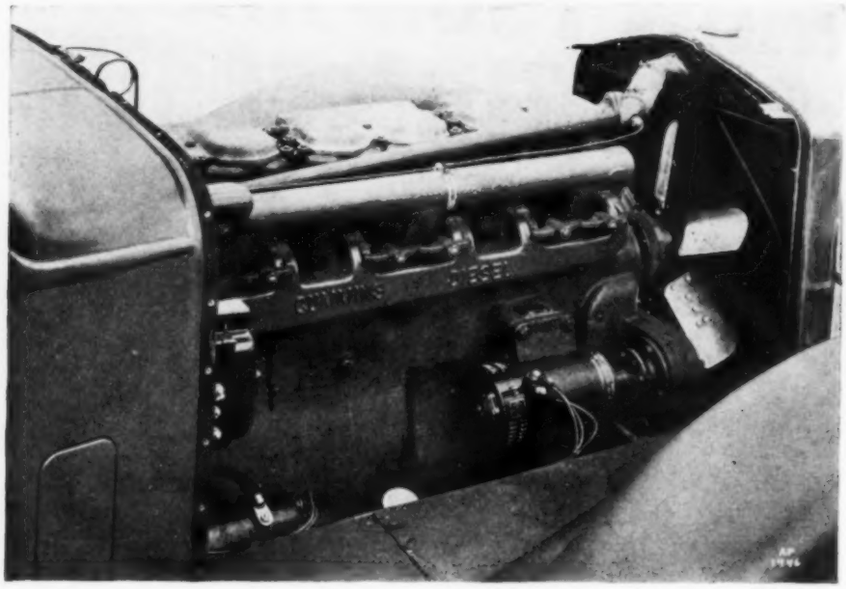
**2 PLY-LOCK**—the new Goodrich way of **locking** the plies about the bead. Anchoring them in place. Positive protection against the short plies tearing loose above the bead.

**3 100% FULL-FLOATING CORD**—Each cord is surrounded by rubber. With ordinary cross-woven fabric, when the cords touch each other, they rub — get hot — break. In Silvertowns, there are no cross cords. No friction.

# Goodrich *Triple Protected* Silvertowns

**SPECIFY THESE NEW SILVERTOWN TIRES FOR TRUCKS AND BUSES**

# DIESEL-POWERED UNIT HAS FIVE FEATURES (*Continued*)



THE ENGINE:

HERE is the power-plant of this interesting new unit. . . . You will note that it is a 6-cylinder Cummins Diesel of the latest improved type. . . . Fuel used is the newest type of the high-speed Diesel fuel as marketed by the large major refineries. . . . Fuel-costs run about one-third the cost as in gasoline-powered jobs of similar size, used in similar service, we are informed. . . . The exhaust system which this operator has worked out is very ingenious and will prove quite interesting. . . . Full details are given in the accompanying article.—Editor.

right hand side of the truck. The first condenser is cooled electrically by a fan. The approximate cost of the equipment for air-conditioning (including installation) was $500.00.

The seats are of the "bucket" type, mounted on spring steel, which, due to its flexibility, greatly relieves the driver from fatigue. A modern touch is secured by chrome plating the spring steel.

Another forward step in comfort is the use of the helper's seat for a sleeper when desired. The sleeper-seat is made in one piece but split into three sections which ride on vertical rails; when the sleeper is used as a seat, the third section (held in place by the rails) is pushed up behind the helper's head, and makes an ideal rest. The sleeper-seat is also mounted on spring steel which absorbs road shocks.

There is plenty of room in this sleeper as it is seven feet long by 28 inches wide. It is said to have all the comforts of a standard "Pullman", as the person sleeps lengthwise; this is a particularly note-worthy point as few cabs are built in this manner. In the conventional sleeper cab, a bunk is provided above and behind the seats of the driver and rider; when the brakes are quickly set, the person sleeping is sometimes disturbed and occasionally the brakes are set so violently that the person sleeping is thrown forward into the cab. The true comfort of this modern sleeper cab can only be appreciated by a driver who has spent years in the old type of cab.

The interior of the cab is kept free of dirt as the entire floor can be easily washed because the seats are mounted on spring steel and ride clear of the floor.

A new type of bus Diesel engine built by Cummins is used. It is claimed to be practically free from vibration at all speeds. The engine develops sufficient horse power so that gear-shifting is materially reduced. Many hills which necessitate shifting with gasoline engines are easily "ironed out" with this new Diesel, it is declared. The fuel used in this engine is the new type high-speed Diesel fuel marketed by large refineries. Fuel costs run about one-third the cost of gasoline-powered jobs used in similar service, we are told.

To insure continuous operation, a special type of wet air cleaner has been designed which practically eliminates dirt from getting into the engine. Three of these cleaners are attached to the intake manifold. This precaution gives longer engine life, and is most important when these trucks are operating in bad dust-storm areas.

The exhaust system is an unusual type. A piece of tubing is used, the end of which exhausts inside of a stack extending vertically up alongside of the cab. In this manner the exhaust passes into a larger stack, the stack being open at the top and also with an opening around the tubing at the bottom; this serves as a muffler. This air space also cools the stack, and it is interesting to note that the stack is painted with the same color as the rest of the body instead of with heat-resisting paint; and it does not burn off.

Drive is accomplished through a five-speed, 700 series Brown-Lipe transmission, using a two-plate clutch and driving through a live axle with 6.33 gear ratio in fourth gear.

A Utility third axle is used which supports the truck frame at four points under load and permits drive-wheel traction to be increased when accelerating and brake reaction to be equalized, it is claimed.

The truck pulls the latest type of Utility six-wheel full trailer. The distinctive feature of this trailer is said to be its strong yet light construction; in comparison to the amount of payload carried the ratio is 3:1.

Brakes are used on all four rear axles, two on the truck and two on the trailer. The brake drums are 17" by 6" in size. Brakes are operated by the conventional Westinghouse system, together with all air-operated safety equipment of the same make. Should any of the air lines become loose, the brakes are automatically set. As an added safety factor, in event of air failure, mechanical brakes are used which operate on the same foot pedal and begin to function beyond the point where air would be ordinarily applied.

It is claimed that these are the first high-tensile, light-weight steel tanks fabricated in the Rocky Mountain region. These tanks will figure about one pound per gallon of payload or approximately half the weight of the steel tanks ordinarily used.

(*Please turn to page* 75)

# *It's the* SLIDING SPINDLE *that pays off*

## *on* VAN NORMAN SENIOR BRAKE DRUM LATHE

Sliding spindle, in long bearing, eliminates spacers and adaptors, eliminates the danger of springing the drum.

Figure what it would pay you to own the only brake drum lathe with a 3" hollow spindle that not only rotates—*but slides in and out.* Here, briefly, are the benefits:

- Easier access to drum interior
- Fewer arbors and spacers
- More working room
- Shorter set-up time
- Elimination of the danger of springing the drum
- Practicability of using a grinding attachment that assures accurate work.

Another exclusive feature—multiple feeds in either direction. Capacity: takes all drums, trues differential cases, turns flywheels and refinishes their clutch sides. This lathe is the biggest money-saver in its class. Ask your jobber.

*"It pays to Van Normanize"*

**VAN NORMAN**
MACHINE TOOL CO., SPRINGFIELD, MASS.

# "Twin-Truck" Assembly Developed by Western Operator

HERE is some advance information on a new development in transportation units—a "Twin-Truck" assembly, illustrated above, which I am glad to offer to you for whatever it may be worth. "Siamese Twin Unit" might serve as an appropriate name.

About a year ago I found it necessary to introduce into my hauling business a piece of truck equipment that would give me more power and one that I could depend on for getting my cargoes delivered on strict schedule. My job is the hauling of hot asphalt a distance of 350 miles, from Billings, Montana, to Dickinson, N. Dakota. This hot load must be delivered without fail, for if it is allowed to cool off, it will mean a long delay in getting it unloaded.

The above picture (the tractor) is one of the first units which I built for this purpose. It happens to be a "Twin Chevrolet" of my own design, which I will try to describe to you in the following paragraphs. The exploitation of this idea, and the perfection of the assembly, of course, is still in its infancy. Here are the details, however:

By Ed. C. Merry,

*Truck Operator,*
*Miles City, Montana.*

I purchased two 1936 Chevrolet trucks—one with a long wheelbase and one with a short wheelbase. The short wheelbase job was bought without cab, and was stripped down to the frame and motor. It was then mounted on top of the frame of the long wheelbase truck, bringing the radiator of the stripped unit within six inches of the back of the cab. This imposition also brought the rear drive axle of the stripped truck into tandem position with the drive axle of the foundation truck. The front axle and springs, were of course removed and dispensed with. The rear axle was fastened to the lower frame.

Then the two frames were securely fastened together, thus making out of two trucks, *one unit*, with dual motors, dual drive-axles and a double frame. The stripped unit, from the radiator to the final drive has not been changed in any way from original standards, excepting to loosen the springs from the frame.

The springs are hooked up in such a way that positive distribution of weight is assured, regardless of the road surface. Means are also employed to allow the rear drive-axle to *follow* the forward one, when rounding curves or turning corners.

Next the cab was extended to cover the back motor, and the radiator, mounted back of the cab proper, cools the back motor. A deck, or floor, is installed in the cab, separating the sleeping compartment (which runs lengthwise of the truck) from the motor compartment.

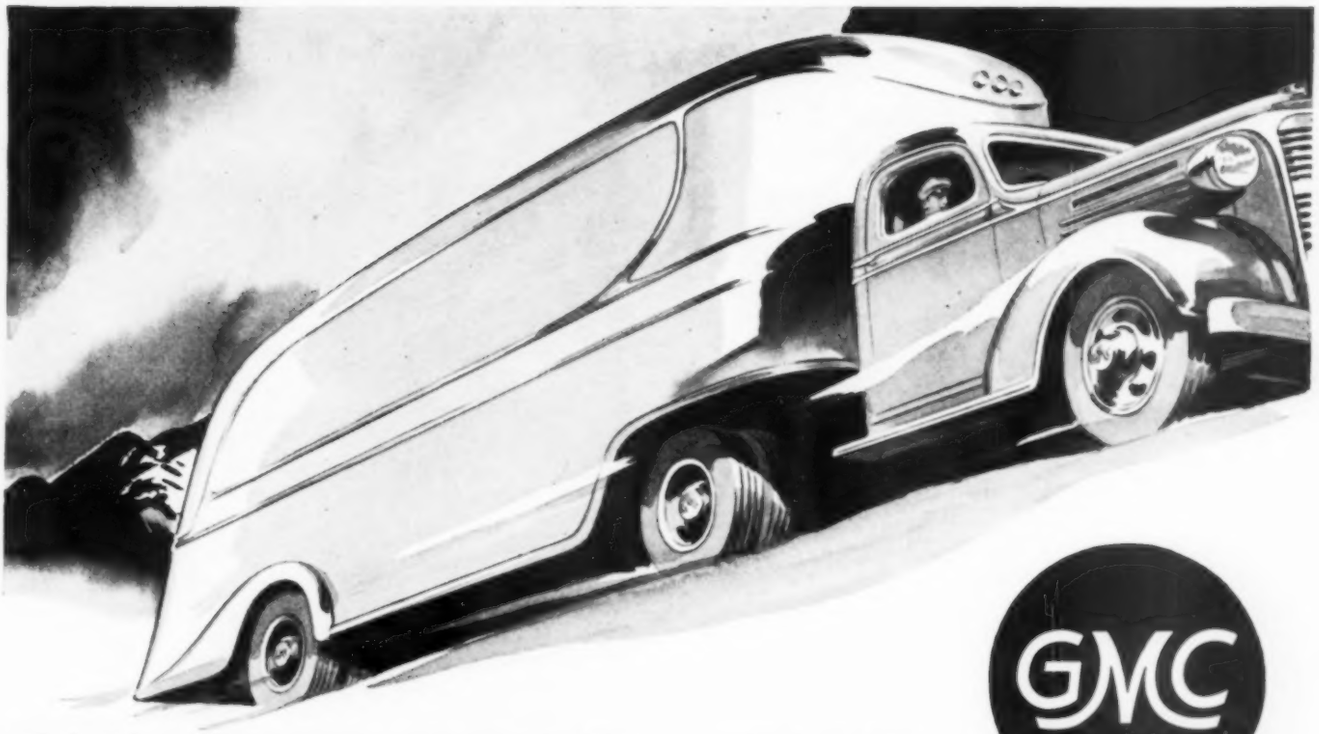
In the above picture may be seen the inspection door of the improvised cab, directly in the center, between the two sets of lettering. A similar door is on the other side. These doors are also used as ventilators when additional ventilation is needed. When left partly open they scoop the air through the motor compartment and on through the radiator in the rear. A blow-type fan is used in front of the rear radiator, as well. The arrow in the picture above points to the location of the radiator, in back of the cab.

All instruments for the back motor are mounted on the dash of the first unit, with the other instruments. The clutches are operated with one pedal. A double set of brakes is also operated with the one pedal. One accelerator picks up both motors. Two gear-shift levers are utilized, mounted in such a way that one can be shifted alone, or both can be shifted simultaneously. Independent starting motors are used.

Thus, these power-units are entirely independent of one another. They can be used both together (as one unit) or either one can be used singly. Two units of any size or of any make may be used, of course. We happened to pick the Chevrolet because it was convenient.

The tractor unit is equipped with 32 x 6, ten-ply tires. On the trailer we use 9.75 x 20 tires. This outfit hauls 10 to 15 tons (20-ton gross load) over mountainous roads in Montana, and also between Minneapolis and Dickinson. It has been in service since last May. The sleeper has proven to be a fine thing, as the drivers report that it is much better to sleep lengthwise of the truck, rather than across the cab.

(*Please turn to page* 75)

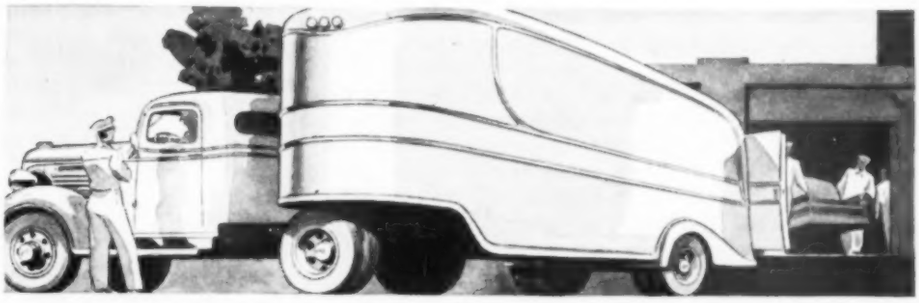


# TRAILERS BY GMC

## and that means TRUCK-BUILT

*Definite advantages of buying trailers from commercial vehicle headquarters*

You can select a GMC trailer with complete assurance that it is "truck built" — designed and engineered by the world's largest builders of commercial vehicles exclusively. Feature upon feature earmark the new 1937 GMC's as quality trailers of balanced construction. Types to fit the needs of 9 out of 10 buyers are available complete with standard bodies. Each is an exceptional value on any sound basis of comparison. Your nearest General Motors trailer dealer will quickly bring you all the facts.



*Trailer buyers are urged to see the new 1937 line!*

# THE TRAILER OF VALUE

GENERAL MOTORS TRUCK & COACH
DIVISION OF
YELLOW TRUCK & COACH MANUFACTURING COMPANY, PONTIAC, MICHIGAN

*Standards Sought for*

# GASOLINE SPECIFICATIONS

•

**AT the request of the American Standards Association, Mr. Hess has contributed this timely article on the subject. . . . The American Transit Association is also seeking gasoline specification standards, as a means towards the standardization of fuel purchases.—Editor.**

By R. E. Hess

*Assistant Secretary,*
*American Society for Testing Materials*

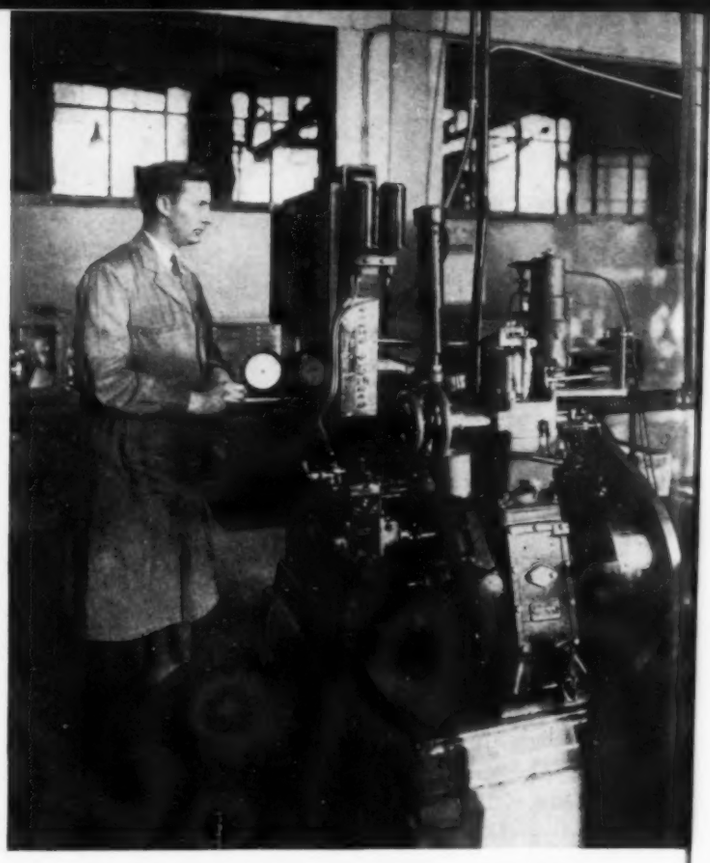
COMMITTEE D-2 on Petroleum Products and Lubricants of the American Society for Testing Materials has recognized for some time the need for generally acceptable purchase specifications for gasoline, and its Technical Committee A on Gasoline is making progress in the development of these specifications.

This need was originally made evident by state and municipal agencies, when considering purchases of gasoline for use in government-owned equipment. Many such agencies are required, by law, to purchase motor fuels on specification. The need for such standards was also originally manifested by other large fleet operators who are in the habit of contracting for their supplies.

Recently the American Standards Association's Sectional Committee on Petroleum Products and Lubricants requested Committee D-2 to broaden the scope of its program to include specifications for gasoline for heavy-duty trucks and buses as desired by the American Transit Association. It is not the purpose here to forecast what the details of the specifications will be, but rather to point out some of the factors that must be considered to protect the interests of the consumer, particularly with respect to distribution, cost and performance.

*Distribution:*—From the very nature of its use, gasoline must be available everywhere and at almost any time. In this respect, gasoline and motor oil are unique among purchased materials. Because most vehicles take delivery from service-station pumps *all* of the time, and all vehicles do so *some* of the time, it is not practical for each consumer to segregate his own supply made to his individual specifications. Neither can he conveniently always refuel at the same service station. Accordingly there must be waiting for him at all or nearly all stations, that particular gasoline which meets the requirements of his motors.

*Cost:*—Any increase in the number of grades of gasoline handled by one service station means an increased cost for tanks and pumps, for maintenance, and in lesser degree for manufacturing expense. This increased cost must ultimately be absorbed by the consumer of the gasoline. Obviously, therefore, for any given place and time the number of grades of gasoline should be kept at a minimum.



The C. F. R. (Cooperative Fuel Research) Engine. This is a laboratory engine by means of which standard laboratory tests of octane-rating of gasoline are made. The results of laboratory tests are then checked against the results of road tests. (Photo courtesy of Waukesha Motor Company.)

*Performance:*—Satisfactory operation of a vehicle depends both upon the design of its power plant and on the nature of the gasoline. Freedom from knocking under ordinary conditions of operation is an important requisite of present-day gasoline. This is measured by the octane number of the fuel. (The octane number of a gasoline is the percentage of iso-octane in a mixture of iso-octane and normal heptane which will match the gasoline in knock characteristics, when compared in a special test engine by carefully standardized procedure. See FLEET OWNER, February, 1936, page 40—"What is meant by Octane Rating.")

The compression ratio of the engine and the combustion chamber design determine the octane-number requirement of the gasoline when the engine is new. Carbon deposition in the combustion chamber during service may increase the octane-number requirement of the gasoline if knocking is to be avoided.

In order to provide for the varying requirements of automotive equipment, two grades of gasoline are usually marketed (premium and regular) which differ in octane number. In some localities a third-grade gasoline is sold which is ordinarily lower in octane number than the regular grade.

Examination of analyses of gasoline samples collected throughout the country show a reasonable degree of uniformity in octane number of the regular and premium grades.

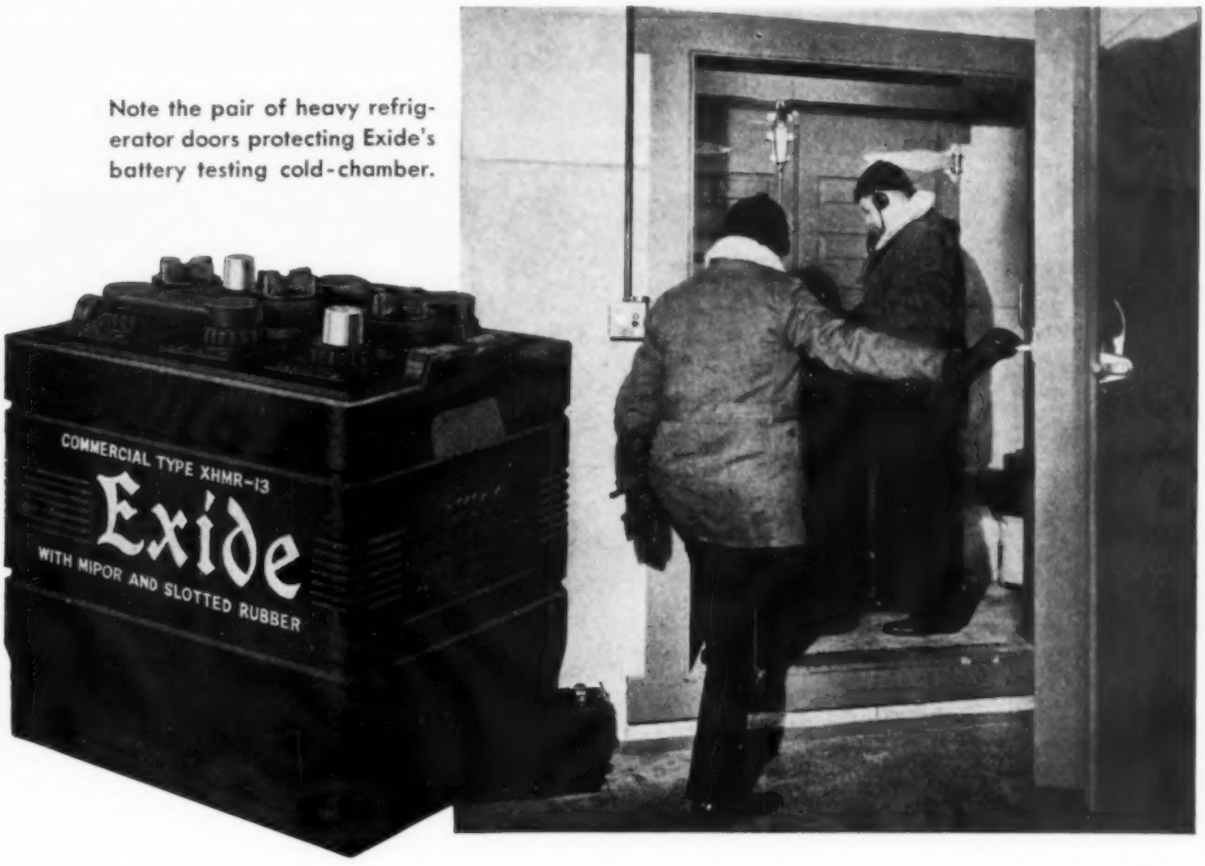
For instance, U. S. Bureau of Mines Report of Investigation 3311 shows that 90 per cent of 473 samples had octane numbers within the following limits:

| *Range of Octane Nos.* | *Regular* | *Premium* | *3rd Grade* |
|---|---|---|---|
| | 68-71 | 74-81 | 50-66 |

(*Please turn to page* 64)

# EXIDES FOR COMMERCIAL VEHICLES

Note the pair of heavy refrigerator doors protecting Exide's battery testing cold-chamber.




## These batteries pass the "Cold Chamber Test" . . . . at temperatures far below zero!

THERE'S a story behind the development of Exide's new line of Commercial Batteries—a story that gives just a little side light on the problems of creating a new product.

In the first place, fleet operators themselves contributed in no small way to the development of these batteries. From their letters and comments, we gained an accurate idea of what they would consider an ideal battery.

The men in the Exide Field Organization had their say on the service and maintenance angle. The Exide Engineering Staff went to work with a full understanding of the actual problems of users. And when Exide's technical and manufacturing facilities are applied to a problem as clear as that—you get results.

The batteries were designed and built, then tested—overloaded, abused and punished in Exide's special cold-chamber where both batteries and engines can be held far below zero indefinitely. When batteries come out of that endurance contest with flying colors, we know they're *right.*

That's what is behind this new line of Exides, and it's why you can use them with confidence, knowing that they'll deliver real service and save you money. Write us for the name of the nearest Exide Wholesaler, who will give you complete details on the four new Exide Commercial Type Batteries. For large trucks, there is the regular heavy-duty Exide line.

Exide

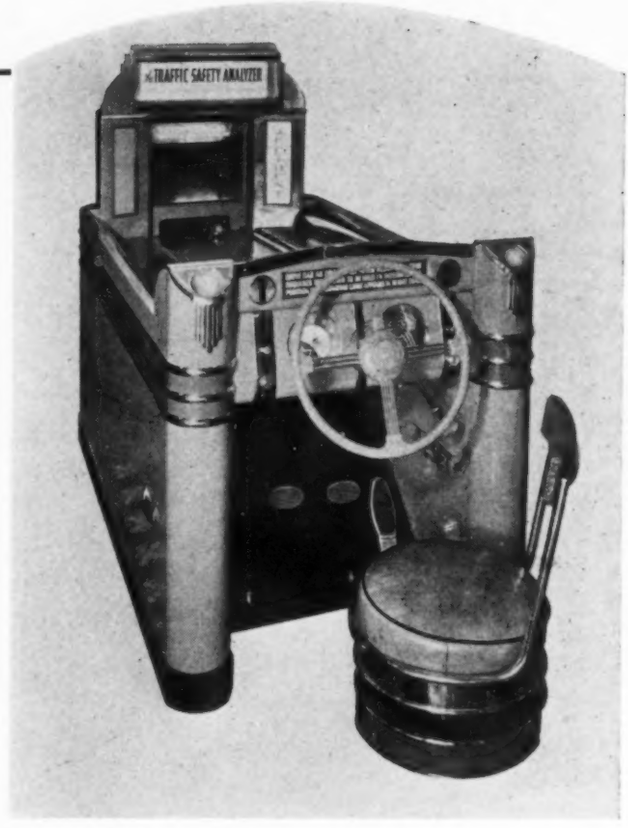
THE ELECTRIC STORAGE BATTERY CO.
Philadelphia
*The World's Largest Manufacturers of Storage Batteries for Every Purpose*
Exide Batteries of Canada, Limited, Toronto

**COMMERCIAL TYPE BATTERIES**

*Night Safety Analyzer*

# ANALYZES ACCIDENT CAUSES

**NEW machine, testing ability to drive safely on unlighted and lighted roads, makes first public appearance in Albany, New York, recently. . . . Fleet drivers are tested, along with others in unique campaign.**




IN a night safety campaign sponsored by an Albany, N. Y. newspaper recently, 619 residents of the capitol city of New York State were tested by a new machine loaned to the newspaper for the campaign by the newly-formed Street and Highway Lighting Safety Bureau, of New York City.

Known as the "Night Safety Analyzer", the apparatus showed that if 160 of the 619 Albanians tested were driving along typically dark highways, they would have been involved in accidents, hitting obstacles they could not see in time on the road ahead.

Another 359 persons had near-accidents which might have developed into accidents if weather and car conditions were not perfect. While operating the machine under conditions of adequate highway lighting, every person tested was able to see the obstacle ahead clearly silhouetted, and was able to stop his car in time to avoid any possible danger.

The Analyzer combines the operating mechanism of an automobile driver's seat, steering wheel, instrument board, accelerator, brake, etc. and a simulation of an open road at night upon which the driver sitting at the wheel controls a miniature car. The road and the car are constructed in accurate scale. Speed and intensities of light are regulated to reproduce exactly normal conditions of driving both under modern highway lighting and with no highway lighting as well.

Looking over his dashboard and with his foot on the "gas", the driver sees before him a view of the road ahead. The tiny car under his control proceeds down the road, the blackness of which is pictured before him on a small transparency or screen. As his car approaches the screen, its headlights illuminate the road.

Suddenly an object looms out of the darkness. As he would under actual conditions, the driver applies his brakes. If he has seen the object in time to recognize it, start to brake his car, and stop without hitting the obstacle, a sign lights up at the side of the machine. "Safe Stop" it reads. If the driver does not see the object in time to react and stop his car, the machine lights another sign which reads "Accident."

By shifting gears, the driver brings his tiny car back to the starting point and is tested again, this time traveling on a lighted highway. He can see the object ahead in ample time to avoid hitting it, of course, and therefore is not involved in an accident because the visibility is adequate for safe seeing.

The machine emphasizes how much more

(*Please turn to page* 64)

Here are the safest drivers of the United Traction, Albany, N. Y., watching a brother operator being tested by the Night Safety Analyzer. . . . These men drive buses in the congested New York Capitol district.

# 336,800 MILES

## —*without removing the generator*

**WE'VE been preaching the principle of voltage regulation for nearly 25 years. We've been telling fleet operators how Volt-O-matic Generators shoulder the battery's burden; protect it automatically from the dangers and expense of overcharging and insufficient charging; furnish all electric current *direct* to lamps, heater, wipers, horns, etc., when the engine is running.**

**Now the evidence rolls up to prove how right we've been: Fleet operators testify to longer battery life. Easier starting. Steady lights. Safer horns. Hundreds of thousands of miles without a cent for generator repairs.**

**But just a word of warning. To give lasting satisfaction, generators with full voltage regulation must be built with utmost care and precision...close fits and accurate adjustments. Only long-skilled artisans and craftsmen—not subject to the pressure of mass production—can turn out reliable, ever-dependable machines of this type. Volt-O-matic Generators are a product of nearly a quarter century of "know-how." That is why—*you take no Chances with Volt-O-matic Generators.***

**UNITED AMERICAN BOSCH CORP.**
**SPRINGFIELD, MASS. NEW YORK CHICAGO DETROIT**

DAVID H. DUGAN, PRESIDENT

**DUGAN BROTHERS**
OF NEW JERSEY, INC.
170 ABINGTON AVENUE
NEWARK, NEW JERSEY
TELEPHONE HUMBOLDT 2-8000

September 11, 1936

United American Bosch Corporation
Springfield, Massachusetts

Gentlemen:

Several years ago our company became reconciled to the fact that the high cost of maintaining our truck electrical equipment, and batteries, necessitated that we investigate the features of your Volt O Matic voltage regulated generators.

During 1928 we made a test installation of a Volt O Matic Q A 225/12 type generator, on a 15 ton trailer, and the immediate results of this installation were so satisfactory, that we later specified your generators on new trucks that were purchased, and additionally, replaced units that were operating on some older trucks with your generators.

Our service men have highly praised your combined regulator design that eliminates the excessive use of wiring, which in turn simplifies inspection procedure, precision detail of workmanship, and by not having to lubricate these units while in service, has removed the difficulty of constant bearing troubles. To date, I do not recall any reports from our service department that stated, that, at any time have we ever found it necessary to dress the surface of the armature commutator.

The generator mentioned above has been in service for 336,580 miles and to date we do not recall ever having this generator removed from the engine. This truck is used daily on heavy duty high speed hauling through two states.

Very truly yours,

DUGAN BROTHERS OF NEW JERSEY, INC.

E. John Dugan

E. John Dugan, Treasurer

"Dugans the Name"

# *VOLT-O-MATIC* GENERATORS

# The TROUBLE SHOOTER

A department, devoted to correspondence from readers of FLEET OWNER. Any questions having to do with automotive service will be answered in this department. All properly signed inquiries will be replied to by mail and such of them as are believed to be of possible interest to other readers will be published in these columns.

## Wants Advice on Heater for Garage

*Question: Will you tell us what type of heater you would recommend for a truck garage which is a frame building with storage space for a small fleet of trucks. The dimensions are 30 x 50 x 10 feet. Floor is concrete.*

*We should also like to get some advice as to a door. What type of door would you suggest in place of a sliding one?—F. L., Two Rivers, Wis.*

*Answer:* It is somewhat difficult for us to advise properly, without knowing more about the heating facilities available. In the event that you have steam in an adjoining building, it would be quite economical to run a steam line through to the garage building and use several of the "unit-type" heaters in which the air is heated by a special steam radiator and distributed evenly by means of an electric blower.

On the other hand, if no steam is available, it will be probably be best to install one of the modern and inexpensive oil-heaters, several of which are on the market. These burn a light fuel-oil, somewhat on the order of kerosene, and those which we have seen are reasonably safe. The fuel-cost should not be unduly great and you will find the operation a very simple one.

With reference to a door, this seems to be a matter of preference. Sliding doors are quite o.k., especially if they are properly hung, on good hardware, and are kept well lubricated and aligned. A type of door which is finding favor is the kind that lifts up and when open lies parallel and close to the ceiling. This type of door is provided with several hinged joints and springs are used to make the lifting an easy operation. Whatever type of door is used, it is important to have a small door for the use of persons, so that you won't have to open the big door every time somebody enters the garage.

●

## Why Do the Axle-Shafts Break?

*Question: We have two 1931 Ford AA trucks, short wheelbase with dump bodies and large size rear axles. We have broken several axle-shafts, and although we have checked bearings, housing, wheels and have put on a new hub, they still break.*

*These trucks are used in highway maintenance and are never loaded over 2½ tons. One axle broke while the truck was running empty. Can you offer any suggestions to cure this trouble?—L. C. C., Marysville, Ohio.*

*Answer:* This job is a ¾-floating axle, in which all of the weight is carried on the axle housing, and we see no reason why your shafts break persistently, since your loads are not so great.

Undoubtedly the condition is due either to source of supply or misalignment somewhere. If you are using original equipment axle shafts, we have nothing to suggest. However, if you are using a "replacement" axle shaft, it might be well to try one of another brand, because sometimes the steels in different makes of "replacement" shafts may vary, and it is likely that by experimenting, you can find out which one is the best.

If the fault is not with the material in the shafts, it certainly should be found somewhere in the alignment of the housing. We suggest that you check not only the *outside* of the axle housing, but also the *inside* shaft bearings, at the differential ends. You might also check the ring-gear differential assembly for bends or run-out.

Another thing which might cause your shafts to break is excessive play in the line between engine and rear-end. This could be wear in the clutch-plate hub, wear in the transmission shafts or gears, wear in the universals, or excessive back-lash in the rear-end. A clutch that "grabs" will also have a destructive effect on axle shafts, and of course, a lot also depends on the manner in which the truck is driven.

We do not know of any "trick" schemes to solve this problem, but perhaps some of our readers can suggest something? If so, the Editor will be glad to hear from you.

## You May Not Believe It!

*(But It's True)*

**THE FACT:**

IN airplane flying, there is no such thing as an "air-pocket". . . . The air has no vacuums. . . . This is contrary to popular belief.

**THE PROOF:**

"BUMPS" in flying are caused by upward or downward air currents, the National Advisory Committee for Aeronautics explains. . . . Downward air currents, for instance, can be caused due to cooling of the air by water, such as when a plane drops slightly as it is passing over a stream. . . . When the stream is passed, it will rise again, without climbing. . . . Thus one of the legendary errors in flying has been cleared up.

# RECORD LOW PRICE ON COMPLETE NEW REO TRUCK

*America's Toughest Truck!*

## $555

**PICK-UP—COMPLETE**

*F. O. B. Lansing, Michigan*

Price includes all-steel top cab with safety glass and option of 4-cylinder or 6-cylinder Silver Crown truck engine. Panel units, on short or long wheelbases, at correspondingly low prices.

Reo Speedwagons and Trucks range from ½ to 4-6 tons including Tractor Trailers and Buses. All models feature new streamlined styling with V-type windshields. Prices start at $555 f.o.b. Lansing, Mich., plus tax. Special equipment extra.

TODAY you can buy a new Reo ½ ton Speed Delivery with cab and pick-up body at the sensationally low price of $555 at factory! And you can choose from two sturdy Silver Crown engines the one that satisfies your needs—six cylinders for fast transport speeds and four cylinders for economical multi-stop delivery service.

The Reo Speed Delivery is smartly styled. Its fleet, low lines and V-type windshields harmonize in every detail with the styling of larger Reo trucks. Operators who require trucks of varying capacities can now gain the impressive advertising value of uniform appearance through Reo's advanced full-fleet styling!

Reo has also added marked mechanical improvements—made America's Toughest Truck still tougher, more economical and dependable than ever! Extra wearing qualities are built in where stress is greatest. Every chassis is designed to give balanced load distribution with greater capacity for bulky merchandise. Positive hydraulic brakes promote safety—and roomy all-steel cabs with unobstructed vision, better ventilation and convenient controls aid drivers in maintaining safety records.

See the new 1937 Reo trucks now. Note how specific models exactly serve your needs. Compare Reo feature for feature and price for price with any trucks in the field. You'll discover why Reo owners are repeaters—why you will make bigger profits when you put Reo on your job!

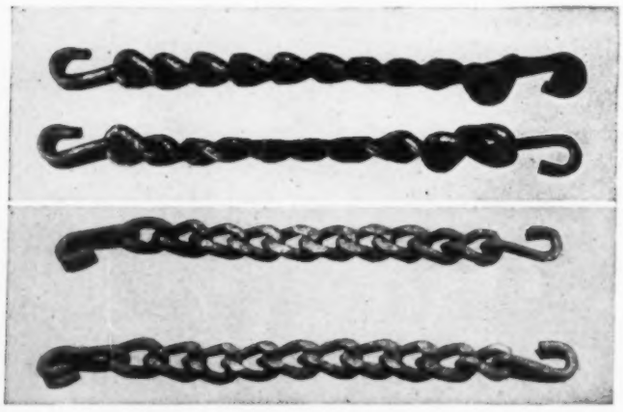
REO MOTOR CAR COMPANY, LANSING, MICHIGAN

# REO SPEEDWAGONS TRUCKS AND BUSES

## UPS Tests Hard-Facing for Tire Chains

TO those responsible for the maintenance of automotive equipment, the approach of cold weather brings to mind a perennial winter problem—tire chains. It is interesting, therefore, to review the results of severe tests made by United Parcel Service, New York, last Winter, to determine the merits of hard-faced tire chains.

Plain steel chains and chains with center cross-links which were protected by hard-facing alloys were tested on trucks operating over partially snow-covered concrete, macadam and cobblestone surfaces near New York City. The cross-links were hard-faced by welding a tungsten-carbide wear-resistant alloy to each link by the oxy-acetylene process.



Comparative side view (above) and road surface view of two chains after 265 miles of winter service. The top chain (top group) and the bottom chain (lower group) only were hard-faced.

In order to compare the various chain materials accurately, plain steel and hard-faced cross-links were alternately used on the same chains. After 265 miles of hard service through ice and snow, upon inspection, the steel links were found to be almost completely worn through. The links protected by drops of the tungsten-carbide material were merely flattened slightly on the tops of the deposit on each link. It was found that the reverse side of the hard-faced links showed tire wear. The tire rubber had actually worn the steel almost as much as the road had worn the hard-facing material.

The results of these tests were so favorable that United Parcel Service, which operates a fleet of 700 trucks throughout the winter in the vicinity of New York City, is extending the use of tire chains with a full set of links hard-faced with the tungsten-carbide material to a number of other trucks. The foregoing has been reported by The Haynes-Stellite Company, producers of the hard-facing alloy.

●

## An Interesting Tire-Data Question

*Question: Can you tell us what difference, if any, we would experience when changing from a tire size of 6.50-17, to 7.00-16? Would the last-named tires increase the revolutions per mile, or would it do the opposite, and if so to what extent? Please oblige an earnest reader of your magazine.—S. J., Grafton, Wis.*

*Answer:* This question is easily answered by referring to tire manufacturers' data. We obtained the answer from the New York branch of The B. F. Goodrich Company. It applies to the tires which they manufacture, and the figures should not vary greatly on other tires, unless we are wrong.

We assume you are referring to 4-ply, passenger-car tires, to which the following data will apply:

6.50-17 — Diameter, 30.77" — Loaded Radius, 14.27" — Revolutions per mile, 700.
7.00-16 — Diameter, 30.33" — Loaded Radius, 14.10" — Revolutions per mile, 701.

From the foregoing data you can easily see that by making the change to the larger size cross-section, the revolutions per mile will not be materially affected. And neither will the performance, as regards speed. The figures may vary with 6-ply and larger tires, and also perhaps with different makes of tires having lighter or heavier treads.

●

## How Aluminum Paint Differs from Paint

WE have often been asked to explain some of the chief differences between aluminum paint and ordinary paint, aside from the fact that a metallic pigment is used. The following information, culled from *Aluminum News Letter*, should be found helpful in this regard:

"Briefly, the difference is in the pigment portion of the paint. The pigments of ordinary paints are fine particles in granular form. The pigment of aluminum paint on the other hand is a flake-like aluminum powder formed by a stamping process. This powder is commercial aluminum in the form of very fine flakes, not granules.

"When mixed with a suitable vehicle these tiny, flat, thin, opaque flakes of pure aluminum make possible the advantages found in this type of paint.

"As aluminum paint is applied on wood, metal, concrete, in fact any surface, many of the tiny metallic flakes held in the vehicle rise to the top of the paint coating to form a "leafed" surface. The remainder of the aluminum flakes in the paint film under the surface lie upon one another just as falling leaves pile together.

"This leaf-like arrangement of the aluminum flakes makes a film opaque to light and resistant to moisture penetration. It gives aluminum paint much of its durability, moisture-proofing qualities, power of reflecting light and heat, resistance to smoke and fumes, and hiding power."

●

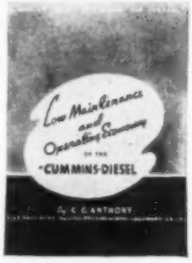
## International Uniformity for 15 Auto Projects

FIFTEEN recommendations for international uniformity in automotive practice have been developed by Technical Committee 22 of the International Standards Association. They have been assented to by the national standardizing bodies of 16 countries and published in ISA Bulletin 10.

The automotive recommendations are for: speedometer and tachometer drive with finger, size of holes for instruments (tachometers, pressure gages, clocks, etc.), oval carburetor flanges, course for opening for carburetors and governors, 14 mm and 18 mm spark plugs, mounting of bumpers for private cars, screwed radiator and tank caps, position of pedals, mounting of distributors, mounting of headlights, terminals for batteries, movement of gear-shift levers, direction of rotation of instruments and machines, diameter of steering wheels, and gear-shift lever screwed handles.

# WORLD BEATERS

## Cummins Diesel Powered Truck
## FIRST Over World's Greatest Bridge




Any fleet operator can have complete reprints of Mr. C. J. Anthony's cost analysis articles as they appeared in the Commercial Car Journal by mailing a post card to the Cummins Engine Company, Columbus, Indiana, U. S. A.

● The Cummins Diesel has always been **FIRST.**

It was the **FIRST** practical automotive diesel.

The **FIRST** to demonstrate diesel economy and smooth running dependability in truck.

The **FIRST** to be universally accepted by fleet operators in all parts of the United States as the profit-maker in motor truck operation.

The **FIRST** to roll up over 4,000,000 truck-miles per month.

The **FIRST** diesel truck with 500 engines showing continuous operating records of 400,000 miles and more.

The **FIRST** diesel with records of 5, 10, 50, 100 and 110 units in ONE fleet.

The **FIRST CHOICE** diesel with eleven prominent truck manufacturers.

Can you afford anything less than the **FIRST?**

**Coast to coast sales and service. CUMMINS ENGINE CO., 220 Wilson St., Columbus, Ind.**

# CUMMINS DIESELS

*Pioneers in Modern Diesel Development*

# • NEWS of the TRUCK INDUSTRY •

### Ford Enjoys Big December Business

FORD Motor Company announces December dealer orders for 1937 V-8 trucks and commercial cars for domestic use as being the largest in the history of the Company, totalling 35,043 units. . . . A feature of the commercial car line, described elsewhere in our last issue, is the new 112-inch stake.

•

### White Sells $2,000,000 in Record Week

TRUCK and bus fleet orders, aggregating more than $2,000,000 have been received in a recent single week by the White Motor Company, Cleveland, Ohio. . . . 1936 has set another high record in the Company's history for deliveries. . . . The year's unit sales are certain to equal those of 1926, White's previous year of greatest volume, according to Robert F. Black, president.

•

### Keeling Now Retail Sales Promotion Mgr.

B. F. GOODRICH Company announces the appointment of N. H. Keeling as manager of retail sales promotion. . . . He comes to his new post after serving as manager of the Buffalo district of the Company since 1933.

•

### Budd Gets GM Stampings Order

EDWARD G. BUDD Manufacturing Company, Philadelphia, Pa., announced the receipt, recently, of an order from General Motors Truck Corporation for the major stampings for the G. M. T. Model T-18 standard and over-engine truck cab. . . . The order will total almost a half-million dollars, it was stated.

•

### General Enters Mechanical Field

GENERAL Tire & Rubber Company announces its plans for entering the mechanical rubber goods industry, with the opening of a plant in Wabash, Ind. . . . Production is expected to be under way early next year. . . . The plant site covers about 30 acres and the buildings will have a total floor space of more than 200,000 sq. ft.

### Circo Offers Landis Grinders

SIX Landis crankshaft grinders are available for prompt delivery, at special low prices. Circo Products Company, 3088 West 106th St., Cleveland, Ohio, is disposing of them. . . . The understanding is that Landis is considering discontinuing this particular unit, in favor of a hydraulic grinder, and Circo has been given selling rights to the six remaining machines, which are brand-new and complete with all attachments desired. If you write to them, mention of this announcement in FLEET OWNER will be appreciated.

•

### White Names Spiller Chief Engineer

W. R. SPILLER has recently been appointed to the post of chief engineer for the White Motor Company. He succeeds F. G. Alborn who resigned a short time ago. . . . Mr. Spiller has been connected in an engineering capacity with White since 1922. . . . Announcement was also made of the promotion of Roger J. Soulen to the position of wholesale division manager, succeeding Paul H. Castner who resigned recently.

•

### Six-Wheelers Cut Costs

MOST of the shipments of Linde Air Products are shipped in returnable cylinders, which are almost as heavy empty as when filled with

gas; therefore their trucks do not operate on the diminishing load plan, as in many other fleets. . . . Steps taken recently by this Company resulted in the adoption of six-wheel trucks, one of which is shown here—a Model 360 Diamond-T chassis equipped with a Model 30 Truxmore third axle. . . . Picture and data furnished through courtesy of Truck Equipment Company.

### A. C. Sales Department Expands

EXPANSION of the sales department of the A. C. Spark Plug Company, was announced recently by W. S. Isherwood, general sales manager. . . . New regional sales offices were opened recently at Atlanta, Ga. and Kansas City, Mo. . . . James F. Kingsley will have charge of the Atlanta region. . . . The Kansas City region will be in charge of Trent R. Middlekauff.

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### New Alloy Piston by Ray Day Corp.

RAY DAY Piston Corporation announces a new aluminum alloy piston that can be finished as close as a cast-iron piston. It is described as being "round—it stays round, and has no self-imposed friction; it is rigid and will stand many miles of service". . . . It was shown for the first time at the Automotive Service Industries Show in Chicago.

•

### Shell Oil Company Consolidates

SHELL Union Oil Corporation, parent corporation, recently took over the operations formerly conducted by Shell Eastern Petroleum Products, Inc., and Shell Terminal Corporation. . . . The name remains Shell Union Oil Corporation, and the firm now takes over active management of all Shell marketing activities in the Eastern United States, as well as in all other sections of the country.

•

### Midland Brake Kits for Chevrolet

MIDLAND Steel Products Company, Cleveland, Ohio, announces that they are now able to supply tractor and trailer vacuum-brake kits for the new 1937 Chevrolet trucks. . . . These kits are produced in all types and are packed complete in handy packages with complete installation instructions. . . . They will be glad to send details if you write for same. . . . You'll mention FLEET OWNER, won't you?

•

### Borg-Warner Offers Lubricants

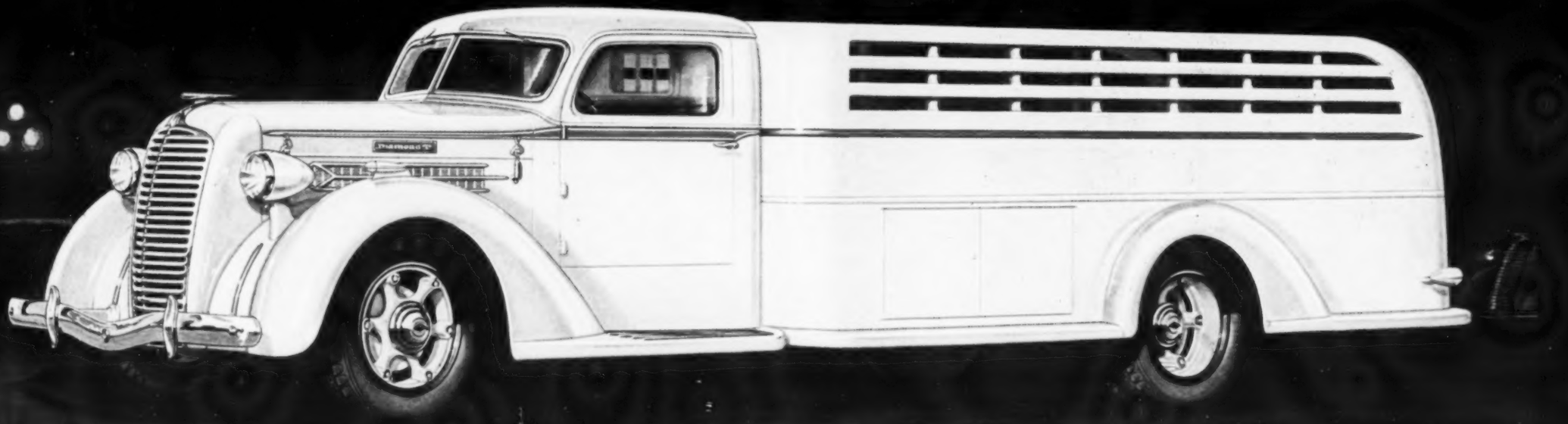
BORG-WARNER Service Parts Company announces the addition of a complete line of oils and lubricants for all types of transmissions, differentials, free-wheeling units and universal joints. . . . The new line of lubricants is marketed under the tradenames of "Borg-Warner" and "Mechanics". . . . They will be manufactured for Borg-Warner by one of the oldest and best-equipped refineries, it is stated.

•

### Increased Loads Offset Larger Brakes

INCREASES in size of truck brakes during the past four years, for greater safety, have been more than offset by increases in the gross load allowances by manufacturers, a survey of the industry's offerings, four years ago and today, reveals. . . . The survey was made by R. K. Super, chief engineer, brake division, Linderman Devices, Inc., Detroit, Mich.

DIAMOND · T
TRUCKS



Dealers are selling *more* Diamond T trucks, to *more* operators, in *more* varied types of service, than ever before in nearly 30 years of Diamond T history.

A BRILLIANT NEW ¾-TON TRUCK AT $525

●

ELEVEN LARGER MODELS FROM 1½ TO 5 TONS AT SIMILAR LOW PRICES!

●

TWO SENSATIONAL NEW 6-CYLINDER HIGH-SPEED DIESEL TRUCKS!

●

SEVENTEEN MODELS OF THE FAMOUS DIAMOND T TRUXMORE SIX-WHEELER RANGING UP TO 40,000 LBS. GROSS CAPACITY!

# The all-time PEAK in truck value brings the all-time PEAK in sales!

THERE have been no "lean years" for men who sell Diamond T trucks. When, because of tougher times, truck operators began to *think hard* about their truck equipment — to weigh values — to study their hauling costs — to inquire among other truck users, *right then* Diamond T sales started to soar!

As a truck user, you don't care about that, except for what it positively proves —

The stand-out truck value, judged by any measure you choose, is Diamond T. Diamond T gives you better engines, brakes, axles, steering, frames, cab and equipment than you can buy for the money elsewhere. Diamond T trucks *look* better. Their reputation, backed by the cost sheets of the foremost fleet operators, is excellent in every respect. They are sold and serviced by more than twelve hundred of the most progressive truck merchants in the business, and prices are low.

We say that Diamond T popularity proves all this. As a prudent truck buyer, you'll want positive, definite evidence of this greater Diamond T value. May we send you complete detailed information? Write or wire — now!

DIAMOND T MOTOR CAR COMPANY
Chicago, Illinois

DIAMOND·T

# JOHN LAW SEZ:

*Recent Legislation as Reported by National Highway Users Conference and American Trucking Associations:*

FEDERAL

Joint Board Holds Carrier "Common"

INTERPRETATION of the term "common carrier" came before Joint Board No. 36 in hearing the application of an operator, who asked for a permit to transport certain commodities between Blue Rapids, Kans., and vicinity and Kansas City and St. Joseph, Mo.

The Board held that the applicant was a common carrier, but refused to grant him a certificate.

Testimony of the applicant showed that he had verbal contracts with eight concerns, but that he proposed to hold himself out to serve anyone, on demand, in Blue Rapids and vicinity, to and from Kansas City and St. Joseph.

In reaching its conclusion, the Board stated:

"Applicant proposes to hold himself out directly in interstate commerce for the general public over regular or irregular routes for compensation. The fact that the applicant would transport property only under a contract, in and of itself, does not bring him within the definition of a contract carrier. . . . "

•

NEW YORK

Trucker Liable for Shipment's Full Value

A MOTOR common carrier may not arbitrarily limit his legal liability for loss of cargo, it was decided recently in the New York Supreme Court, when the Court ruled that the carrier must pay the shipper the full value of goods allegedly hijacked from the carrier's truck, en route to New York City.

Deciding against the carrier, the Court ruled that $3,932.10, the full value of the merchandise, was due the shipper, despite the carrier's contention that it was liable for only $1,547, based on the valuation of 50 cents per pound, the total weight of the shipment having been 3,094 pounds.

The carrier asserted that the express receipt given the shipper constituted the contract between shipper and carrier, and that the shipper was bound by the terms set forth in this receipt. Its liability, therefore, did not exceed $1,547, the carrier claimed, adding that if the shipper had declared full value (instead of not declaring any value) it would have provided full insurance for the cargo.

However, the Court held that since the defendant was a common carrier, it could not limit its liability, unless there was a choice of rates. It is incumbent upon every common carrier to offer a shipper alternative rates or freight charges which would enable the shipper to elect at what declared or released value it wanted its merchandise shipped, the Court said.

The Court, in deciding against the carrier, held the provision in its receipt to obtain insurance for the shipper on the declared value above 50 cents per pound, did not afford the shipper an opportunity to transport its merchandise at a rate whereby the carrier would be fully liable for loss or damage to the goods.

•

FEDERAL

I.C.C. Exempts Private Carriers

MERCHANTS, manufacturers and others who are engaged in the transportation business, incidental to their regular line of work, or to deliver their own merchandise, will be exempted from compliance with provisions of the Motor Carrier Act, according to a recent ruling of the Interstate Commerce Commission.

However, they will be required to observe the regulations governing maximum hours of workers, safety of operation and standards of equipment.

The Commission said it was not prepared to rule finally on this question, but that it desired to clarify its position pending such a decision. It said: "There has been no formal decision relative to the Commission's jurisdiction over such transportation. Until such a formal decision has been made, or until further notice, the commission will not require compliance with the general provisions of the Motor Carrier Act on the part of any mercantile or manufacturing establishment engaged in transportation, "excepting the regulations noted."

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FEDERAL

Carriers Fined for Violating Tariffs

FEDERAL Judge Albert L. Watson found two motor carriers guilty, recently, of not adhering to their filed tariffs. With counts against the two companies for charging less in some instances and more in others, than their published rates, the maximum penalties of $500 and $100 respectively were levied. The two companies operate between Pennsylvania and New Jersey points as common carriers.

This is the first criminal proceeding won by the Interstate Commerce Commission in the matter of tariff violation. The fines were levied on the first count of each charge, action on the other counts being suspended and the companies put on probation.

FEDERAL

ICC Denies Permission to Self-Insure

THE Interstate Commerce Commission, in the first case of its kind to come before it, recently denied permission to a truck operator in New England, the right to self-insure under the Motor Carrier Act.

The operator has about 100 pieces of equipment and operates a regular-route common carrier service, which constitutes about 10 per cent of its gross business, the balance being transportation over irregular routes.

The application for self-insurance was made only to insure against bodily injury and property damage liability over a small percentage of its operations, since it already carries this type of insurance with regular companies, and only a small portion of it is not "legally" effective in certain territories where the carrier operates.

The ruling denying even this small amount of self-insurance was made, chiefly because there was no assurance that these outlying operations might not expand or be extended.

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OHIO

Truck Lessee is Carrier, Not Broker

WHEN a trucking company hires other trucks, but controls and directs them as though their drivers were its own employees, the company is not a broker, but a carrier, ICC Examiner Parker ruled recently in Cleveland, Ohio.

The examiner recommended that the trucking company be given a permit authorizing operations in the transportation of steel over irregular routes between points in Ohio, Pennsylvania, West Virginia and New York. On the date of examination, 30 trucks were owned by the company, and 57 were leased by them.

The examiner said: "Applicant's method of operation in some respects closely resembles that of a broker—namely, the absence of a lease for any specified period, and the retention of a percentage of the freight charges. Under the Act, however, a broker may engage only common or contract carriers to perform the actual transportation of property, and does not directly, or under lease, undertake to perform the transportation himself.

"Here the additional trucks engaged are exclusively in the service of the applicant and under its control and direction in the same sense as though the drivers thereof were employees of the applicant, and they may be considered a part of applicant's transportation unit."

# 1937 GMC's OFFER:

- *Complete New Line*
- *Low-Priced Half Tonner*
- *Line of C. O. E. Jobs*

A COMPLETE new line of trucks has been announced for 1937 by the General Motors Truck and Coach Division of the Yellow Truck and Coach Manufacturing Company, Pontiac, Mich. These models have advanced sharply in appearance-value with new stream-styled contours, and are claimed to be highly competitive in quality, appearance and price.

The company, for the first time in its history, has also introduced a new light, short-wheelbase low-priced unit. It is a 112-inch wheelbase truck, rated at half-ton capacity and the chassis is offered at a price of $395 f.o.b. Pontiac, Mich. Continued in the 1937 line is the 126-inch wheelbase ½-ton unit, many of which were sold during 1936.

Indicative of the trend towards cab-over-engine design is the fact that this company now has a complete line of COE models ranging in carrying capacity from 1½ to 12 tons—the 1½-2 ton job being priced at $830 complete with cab, f.o.b. Pontiac, Mich.

All models in the GMC line have been improved and refined. The stream-styling is emphasized by "Dual-Tone" color-design—a new GMC development—offered in twelve color combinations at no extra cost. New all-steel "helmet top" cabs—standard and deluxe—are available for every model. Many of the models feature such mechanical improvements as a new vacuum-controlled distributor which, it is asserted, provides greater fuel economy; a more efficient cooling system resulting from a more centrally located fan; and a new offset water-pump of the packless type with automatically adjustable spring-loaded seal.

The conventional models are provided with a new stabilized front-end design by which the core and shell are mounted independently of each other, thus relieving the shell of all loads and preventing distortion by absorbing road shocks. This is supplemented in the 2½-ton and up models by a new diagonal tie-rod bracing of radiator to cowl, reducing excessive movement and hood misalignment.

Further improvements in the conventional models include increased bearing capacity in the transmission and a heavier frame in the 2½ and 3-ton units; increased brake lining area in the 2 and 2½-ton units; larger springs in all models above the 2-ton unit; heavier steering gears in the ½ to 4-ton units; improved optional dual-performance axles in 1½ to 6-ton models; and more equitable load distribution in the ½ to 2-ton units.

The 230-inch engine used in the ½ to 2-ton units features such refinements as full-length water jackets for better cooling; a new water-pump which eliminates the need for servicing; ribbed cylinder barrels to prevent distortion; improved electro-hardened aluminum pistons; larger valve lifters and longer valve guides which contribute to more efficient operation; new exhaust valve material which is heat-resisting and non-corroding; sturdier crank-shafts; a more efficient crank-shaft oil-seal; inverted type fuel-pump which reduces the possibility of vapor lock; improved clutch facing and other refinements.

The cab-over-engine models also have many features which, it is claimed, will contribute to better performance and economy. In addition to the availability of dual-tone color design, GMC engineers have retained in the cab-over-engine models many features of conventional GMC models. In fact, the cab mounting marks the only major construction change. The relation of power plant to front and rear axles is undisturbed. The conventional forward placement of the front axles results in improved riding qualities and permits of a rear opening door which insures a better rear view vision through the partially opened

(*Please turn to page* 76)

The new GMC line includes two half-ton units, available on either 112-inch or 126-inch wheelbases, with either pick-up or panel bodies. . . . The new pick-up job is shown at the left, while the new panel job is shown at the right. . . . The new GMC cab-over-engine design is illustrated above.

# MILLIONS SAY: "Make mine Hoffman"

## *and fleet owners like Hoffman say:*

# "MAKE MINE DULUX!"
REG. U.S. PAT. OFF.

**...THE FINISH THAT GIVES TRUCKS**
**FINER APPEARANCE...GREATER DURABILITY...LOWER MAINTENANCE COSTS**

WHEN a good glass of beer is the order of the day, millions demand Hoffman.

And when it comes to a finish for trucks that looks better, lasts longer and lowers maintenance costs—fleet owners everywhere ask for Du Pont Automotive DULUX.

Every day, in every part of the country, DULUX is saving money for truck operators. It is the sparkling finish that gleams on thousands of trucks . . . a finish that has proved its extraordinary ability to "take it," in spite of the daily bumps, knocks and hard service a truck finish has to put up with.

DULUX comes in an almost endless variety of brilliant colors. And because of its tough, protective film, DULUX *keeps* its lustre, resists cracking and chipping, and the severe exposure to year-round weather conditions every truck meets—all of which means lower operating costs because of fewer trips to the paint shop.

DULUX is easily applied, either with brush or spray. If you maintain a shop, your trucks can be refinished right there. If not, an Authorized DUCO-DULUX Refinisher can do it for you.

Get full particulars about DULUX and how it will save you real money. E. I. du Pont de Nemours & Co., Inc., Finishes Division, Refinish Sales, Wilmington, Delaware.

DU PONT
REG. U. S. PAT. OFF.

**AUTOMOTIVE DULUX**
REG. U. S. PAT. OFF.

## Double-Purpose Unit Carries Freight, Fuel

HERE is an interesting double-duty semi-trailer that's worthy of special mention. It has been in operation since last April by the Lux-Witwer Wholesale Grocery Company, Topeka, Kans., which company also operates a number of retail gasoline and oil outlets.

S. E. Lux, Jr., president of the Company, had been letting separate contracts out for the hauling of his gasoline, and also his groceries, the work being done by contract haulers. That is, until he devised the idea of using a combination unit, hauling groceries on the outbound trip to communities in western Kansas, returning with a load of gasoline for distribution from bulk plants to service stations.

The idea, of course, was to haul cheaply enough to be able to compete with chain stores, and the savings occasioned through the use of this unusual unit have enabled him to do it, we are told.

As the picture shows, the semi-trailer is built on a Columbian frameless design, resulting in a saving in dead weight. Specifications are: 2,500-gallon tank, with four compartments equally divided; 5-inch ball-and-socket fifth-wheel; 12,000-lb. Shuler drop-forged, drop-center axle; 34 x 7, 12-ply dual pneumatic tires; hydraulic brakes with Lathan-Besler double-line control system. The tractor is a B-30 International.

This is, of course, a custom-built job. The tarpaulin bows are adjustable and can be raised to meet different needs. All of the gasoline load is carried below the merchandise deck level, which is 51 inches above the ground. Suitable vents are provided, insuring absence of gasoline odor in merchandise carried. Further details, if you want them, will be sent by Columbian Steel Tank Company, Kansas City, Mo.

●

## Dump Truck Operator Adopts Diesels

A RATHER large order for Diesel engines was recently placed by the B. Turecamo Contracting Company of Brooklyn, New York, with the Cummins Engine Company. This firm is one of New York's outstanding contracting firms and does a great deal of work in road-building in the lower New York territory.

For years the B. Turecamo Contracting Company have used Diesel engines almost exclusively in their fleet of tow-boats that are used to pull scows of gravel and crushed rock. In the Spring of 1936, they made their first installation of a Cummins HB-4 Diesel engine in one of their A. C. Mack dump trucks. In October they placed an order with the Cummins Diesel Sales Corporation of New York, for 18 additional engines of the same type. This order completely Dieselized their fleet of dump trucks. While there are a few isolated installations of Diesel engines in dump trucks over the United States, it is interesting to note that this firm has *completely* Dieselized its fleet.

They use these trucks between their Marine Terminal at the foot of 24th Avenue, Brooklyn, and their various contracting operations. Contrary to the prevalent belief that Diesels in trucks were only suitable for long haul operations, the 19 Cummins-powered Turecamo dump trucks have definitely established that there are tremendous savings to be made on short haul work, according to Cummins officials.

●

## Fleet Man Designs Ingenious Service Car

IN order to minimize delays occasioned by winter troubles, when milk must move regardless of weather conditions, The Clover Leaf Creamery Company, Minneapolis, Minn., has had their maintenance department design and build this interesting service truck.

It is mounted on an International chassis, equipped with dual "lug-type" pneumatics at the rear. The body design and special equipment are of unusual interest. Note the lock compartments on the side. These contain hand tools and all necessary "quick repair" parts for road service work, such as spark plugs, ignition points, condensers, etc.

There are also two compartments which are accessible from the back of the truck. In one of these are kept

blocks, tackle and other equipment used when pulling stuck trucks out of deep ruts. In the other is stowed a special towing boom and the out-riggers for the Manley wrecking crane, which can be seen in the picture.

Incidentally this swinging-boom type of crane is operated from a power-take-off, and sufficient cable is carried so that they can handle any situation—even if a truck should get stuck in an alley snow-drift. With this equipment they can back up to the alley and pull the truck out by the cable. In addition, they can handle practically any other kind of wrecking job.

Clover Leaf Creamery operates a sizeable fleet of trucks and maintains their own garages, a portion of which can be seen in the picture. As with all progressive milk companies, "Service" is their watchword.

# *Approved in* 1936
# *Improved in* 1937

**THOUSANDS of truck operators were introduced to a new standard of truck value in the low-priced field during 1936. They bought Mack Jrs . . . tested them in every line of work . . . and collected dividends in the form of greater dependability, top performance, and new rock-bottom economy.**

**For 1937 the Mack Jr reaches an even greater degree of perfection. New streamline styling . . . Bigger and roomier Cabs . . . Mechanical improvements throughout—Bigger Brakes (18% to 38% greater in area)—Heavier Frames —Longer Wheelbases. Truck-built throughout for a long life of economical operation.**

**Before you buy any truck at any price, see the complete Mack line.**

**MACK TRUCKS, INC.**
**NEW YORK, N. Y.**

## SEE THE POPULAR MACK EH

Such instant approval was accorded this model last year that truck buyers increased EH purchases on an average of 178% every month!

The Mack EH, rated at 18,000 pounds gross, is precision-built to do the toughest hauling jobs—dependably and economically. And its price is the lowest ever quoted for a standard Mack truck.

Mack

# LETTERS TO THE EDITOR

## NOTE OF THANKS

● *Dear Mr. Fischer:* Another effort to protect our industry, as represented by the Third Annual National Motor Truck Show, is now behind us and I think you will agree that history has been written.

Conducted in an economical manner, with definite constructive objects in view, namely, the national promotion of highway transportation, it was made a success through cooperative efforts on the part of individuals and business concerns who had seen fit to recognize the advantages of such an affair.

It is a great privilege and honor to convey to you on behalf of the Board of Directors of the New Jersey Motor Truck Association, their sincere appreciation and thanks for your generous patronage and cooperation, only through which could the affair have been made a success.—*John F. Winchester, Pres., New Jersey Motor Truck Association, Newark, N. J.*

●

## WANTS INDEX TO ARTICLES

● *Dear Mr. Fischer:* I have been a constant reader of your magazine FLEET OWNER for a number of years and wish to say that I like it very much. I find the time to read every article in it, and it is well worth *anybody's* time.

After I finish each issue, I file it away for future reference, and in this connection I am wondering if you have ever made up an index to the articles? If you can send me one, I can assure you that it will not go into the waste-basket.

My company operates a number of trucks and cars, varying from 25 to 35 units, and I have been able to keep transportation costs down below 5c per mile. When I get it down to 3c per mile I will feel satisfied.

I have been maintaining trucks for over fifteen years, and am always glad to exchange ideas with other fleet operators or maintenance men, especially baking company men, through your magazine. How to properly maintain a fleet of trucks is a long and complex story, but the basic points to work on are few and no maintenance man can get the right results unless he follows them. And careful study of the magazine FLEET OWNER will help, too!—*Geo. F. Christenbery, Cameron & Barr Baking Company, Chattanooga, Tenn.*

●

## INDISPENSABLE

● *Dear Mr. Fischer*: Have been a reader of your magazine, FLEET OWNER, for a number of years when I was shop foreman for the Hill Bread Company, and I want to thank you for sending it in the past.

I am now shop foreman for the Harrison Baking Company, and would like to have you put me on your mailing list at this company. I have found your magazine a great help and now I can't get along without it.

Will you kindly send the magazine to the garage address if possible, so that there will be no chance of its getting lost.—*Jean Babin, Shop Foreman, Harrison Baking Co., Inc., Harrison, N. J.*

●

## GLAD TO OBLIGE YOU!

● *To the Editor:* I would appreciate your cancelling my copy of FLEET OWNER formerly sent to me care of Fredrickson Motor Express Corporation, as I am no longer connected with that company; my new connection is as below.

The monthly issues of your magazine, FLEET OWNER, are very interesting and I miss them very much. If you could arrange to resume them to me in my new connection I would greatly appreciate it.—*F. G. Briggs, Comptroller, Buckeye Stages, Inc., Cleveland, Ohio.*

## "CHEERFUL RECEIVER"

● *To the Editor:* We always enjoy getting your magazine, FLEET OWNER, and read it carefully. We note very carefully the advertising and the many suggestions contained in it. We might add that we are a "cheerful receiver" of this publication every month.—*Chas. B. Young, Purchasing Agent, Superior Laundry Company, Charleston, W. Va.*

●

## MORE PERFECT COMBUSTION?

● *To the Editor:* In connection with an inquiry recently started by the grand jury into complaints of noxious gases discharged from the exhausts of buses and other motor vehicles in New York City; and due to the reported tests made by the WPA for the Department of Health, for gases and smoke discharged from the exhausts of certain buses; and due to the report of the Transit Commission in regard to the contamination of the air of the streets by exhaust gases; and also due to Prof. Yandell Henderson's letter (of Yale University) published in the *New York Times* on October 18th, pointing out the absence, as yet, of the knowledge and means by which the exhaust gases may be completely combusted before discharge, may I venture to call to your readers' attention the following:

The writer has developed an auxiliary liquid adjunct fuel, one gallon of which will blend with 400 gallons of gasoline, the use of which he claims will liberate free oxygen when the fuel treated with this solution is compressed and ignited in any engine. The formation of carbon thus is minimized, because this fuel causes hard carbon to be oxidized into carbon-dioxide gas, which is disposed with the exhaust gases of the motor. The writer's claim is that this disposal of the carbon and carbon-dioxide gas and the added oxygen that combines itself with the fuel mixture, not only causes more perfect combustion, but also helps greatly to eliminate or diminish the smoke and noxious gases discharged from the exhaust. Theoretically, it should also result in greatly diminishing the dangers accruing with carbon-monoxide.

This fuel has been tested by the City of New York Police and Purchase Departments and many truck and bus operators in Greater New York have been familiarized with the results. By bringing about more perfect combustion, it is natural to claim elimination of carbon formation, smoother operation, better pick-up and increased power and mileage.

May I call this product to the attention of interested engineers and representatives of reputable oil companies, as a possible solution to the problems outlined in the first paragraph of this letter.—*George Eghyan, 120 E. 30th St., New York, N. Y.*

# Luce Announces "Merchandor" for ½ to 2-Tonners

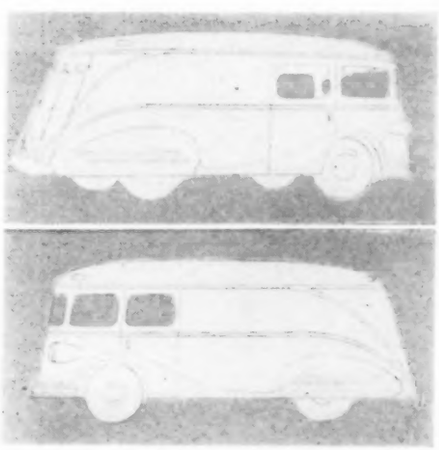
**ADDITION to "Mastercraft" line of truck bodies features cab-over-engine design, low cost-per-mile, unusual advertising possibilities and many features of operating convenience. . . . Here are the details:**

THE latest offering of Luce Manufacturing Company, Lansing, Mich., consists of *"The Merchandor"*, a retail-delivery type body of cab-over-engine design, available for use on all chasses of light and medium capacity, from ½ to 2-tons inclusive. This range includes such industries as bakers; distributors of tea, coffee, yeast, cigarettes, etc.; grocers; department stores, confectioners; caterers; florists; dry-cleaners; and a host of merchandisers in similar lines. This job is a notable addition to their "Mastercraft" line of truck bodies.

In designing *"The Merchandor"*, Luce engineers abandoned all precedents and started out with a fresh viewpoint. Freed of any old conventions, they developed the unit which is illustrated here. In looking it over we find that the hood and cowl have given way to a cab that is integral with the body, affording good vision and protection from the elements.

Streamlining has been given careful attention, and considering the short wheelbase which jobs of this kind require, there is observed a splendid effect of generous length which has been incorporated into the design. By utilizing a portion of the "over-engine" space for the driver's seat and controls, and by widening the body flush with the wheels at this point, loading space has been augmented in both width and length.

The operation is declared to be ideally convenient. *"The Merchandor"* retains the usual "Mastercraft Retail Delivery" type of one-step entrance. Doors on both sides are operated by easy sliding-action toward the rear, where they may be locked in open position if desired. When the doors are closed, the body sides are flush and the steps are protected from all obstructions and also the weather.



While the over-all payload dimensions of *"The Merchandor"* are declared to be larger than in bodies of conventional panel type, we understand that the cost is not greatly increased, since many important chassis items—such as fenders, radiator shell and other major parts—are eliminated.

The manufacturer claims that this type of unit has many of the ideals which transportation engineers are seeking—including low cost per mile. The value of its appearance-assets is obvious. Sales managers are naturally quick to sense every legitimate sales and advertising possibility—and we do not have to state that the "unusualness" of the job illustrated here presents some attractive features based on eye-appeal alone.

It is a well-known fact that in the past, users of truck bodies in the lighter chassis range had to be content with a great deal of compromises, because the custom has almost always been to build as good a body as possible to fit the remaining space that was left back of the engine hood and cowl. After many years of this practice, chassis manufacturers, body builders and fleet operators, are beginning to agree, it would seem, that this scheme-of-things can be considerably improved, and bodies of this type (made by different manufacturers) are being announced from time to time.

The construction details of this brand-new creation are not available at this time, but we

(*Please turn to page* 64)

# NO FOOLING!

## THEY'RE NEW--*and* FREE!

THE following numbered selections have been chosen by Editor Fischer as this month's trade literature offerings. . . . These booklets are GUARANTEED to be interesting and are offered NOT on the basis of producing inquiries for advertisers, but on THEIR OWN MERITS as handy reference data. . . . If you don't believe it, send for a few of them and prove it to yourself. Do not confuse this page with the voluminous conglomerations found in ordinary (the other fellows') magazines. . . . The coupon is for your convenience. All you need is an envelope and a 3-cent stamp.—H. C. F.

**312.** WHEEL BEARING CHART. . . . If you operate vehicles using ball-bearings in the front-wheels, you surely could use a copy of this free wall chart. It is of convenient size, printed on heavy stock, suitable for tacking on the wall in the shop. . . . It answers all questions (with diagrams, too) having to do with proper front-wheel bearing adjustment, installation and lubrication. . . . Number 312 on our coupon below brings a free copy, *by mail*, without obligation.

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**313.** LATHE HANDBOOK. . . . Ten minutes spent with this new 52-page handbook and catalog will save you many equipment-dollars this winter. At least, that's what the manufacturer tells us. . . . It illustrates and describes the many improvements made in Atlas lathes and drill presses and contains a lot of interesting shop data as well. The low prices will really surprise you, so we are informed. . . . However, you don't have to buy *anything* as the new handbook comes to you free, gratis and for nothing, and it will be *mailed* promptly if you indicate Number 313 on our coupon.

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**314.** TIMKEN NEWS. . . . That's the title of an interesting magazine published every month or so by Timken-Detroit Axle Company. They have a fleet mailing list that includes (entirely free) many of our fleet-operator readers. . . . The magazine itself contains practical truck and bus articles—not success stories, but real, factual discussions of the many mechanical units entering into truck design, including axles and brakes. . . . If your name is not already on their free mailing list, we'll be glad to see that it goes on at once. Indicate number 314 on the coupon below if you want it, and remember that it's as free as the air you breathe.

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**315.** WEED CHAIN HANDBOOK. . . . If you haven't got the Weed Tire Chain Handbook in your files, we'll get you a free copy at once. . . . It is literally a complete manual on all types of truck chains, car chains, towing chains, slings, etc. . . . Number 315 on the coupon brings you a copy of this manual that's really worth having.

•

**316.** ALUMINUM BODY HANDBOOK. . . . We've mentioned this subject time and time again in this department, and have furnished many copies to interested readers. . . . As with all things, a new edition is off the press. In it you will find a liberal amount of data and constructional information on body building with the use of aluminum. . . . A table giving patterns and dimensions of all of the structural shapes available (angles, I-beams, U-beams, etc.) will prove very enlightening, since there is an almost unlimited number of different shapes that you can use to good advantage in body construction and repair work. . . . Number 316 brings a free copy promptly.

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**317.** AUTOMOTIVE FINISHING SCHEDULES. . . . That's the title of a new book on vehicle painting, using the newer type of synthetic enamels, of course. . . . Egyptian Lacquer Company (don't let the name mislead you) is offering both the new finish and the new book. The former dries dust-free in 15 to 30 minutes, while the book is still wet—the ink, we mean—since it's just off the press. . . . The book, plus a bunch of color-chips pasted on a color-card for handy matching, comes to you by mail. . . . That is, if you ask for it by including Number 317 on our coupon below.

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**318.** EXHAUST GAS ANALYSIS. . . . Not such a tricky subject as it sounds, but one that will, if properly studied, save many dollars that are now passing out through the exhaust pipe in unburned fuel, etc. . . . We have just run across *two* very interesting manuals on the subject that tell you, in simple language, all there is to know about practical exhaust gas analysis, show you the simple instruments used in checking, and try to make an "expert" out of the average mechanic or fleet supervisor. . . . For *free* copies (and they're really worth having) please mark Number 318 on the coupon below. . . . No obligation.

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**319.** "THIS UNMATCHED ECONOMY". . . . That's the title of a new book issued by one of the prominent truck manufacturers—FWD—if you *must* know. . . . It sets out to explain what they mean by "controlled power" and how this fellow will help you cut costs such as depreciation, maintenance, tires, fuel, overhead, license, taxes, insurance, drivers' wages, etc. . . . Sounds like quite a big order, and that in itself should make it worth sending for. . . . Number 319 on the coupon brings a free copy of this interesting book.

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**320.** STATE LIGHTING CHART. . . . Here is a state regulations chart that is gotten up with especial reference to lighting equipment. And this includes marker-lights, flares, direction-signals, stop-lights, reflectors, etc. . . . K-D Lamp Company issues it, and with it comes a *complete* catalog on automotive lighting equipment. . . . Every effort is made to keep this material up-to-date and therefore it should be something very desirable for either local or interstate operators. . . . Like all other things on this page, it is free, and will be mailed to you if you indicate Number 320 on the coupon below.

The Editor, FLEET OWNER, ..... 1937
90 West St., New York, N. Y.

Kindly send me without cost or obligation the following literature mentioned in the January issue. (Order by number)

..... ..... ..... ..... ..... .....

..... ..... ..... ..... ..... .....

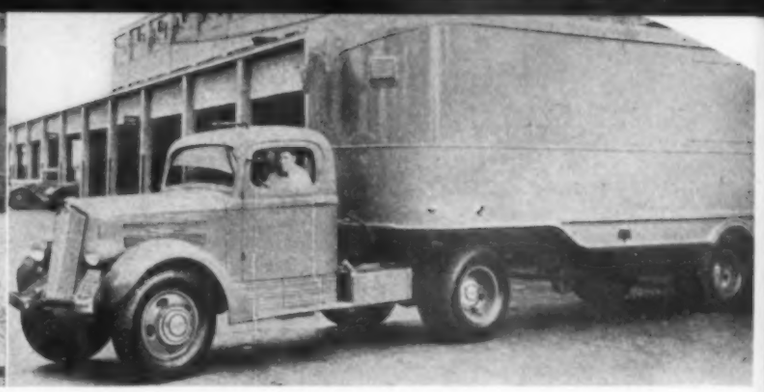
Name of Fleet .....

Address .....

City and State .....

Your Name ..... Position .....

Number of Vehicles Operated .....



# White Announces New "700" Series *in* Low-Priced Truck Field

ANTICIPATING the coming year to be the greatest in the annals of the truck industry, Robert F. Black, president of the White Motor Company, has announced his firm's entrance into the low-price truck field with a new line priced at less than $1000.

The lowest-priced White truck ever to be placed on the market, the new line will be listed at $985 and up, rated in the 1-1½ ton field, and will be turned out in two models—Model 700 and 700K tractor. Embodying well-balanced mechanical specifications, the new series will make available a group of optional features such as wheelbases, transmissions, rear axle ratios and tire sizes, to meet the requirements of specific operations.

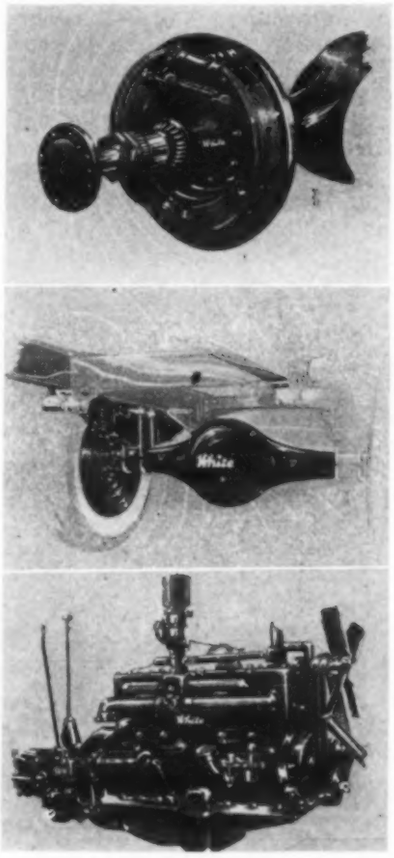
The power-plant of the new 700 series will be a new White six-cylinder engine of 250 cubic-inch displacement, having special light-weight iron pistons and an ingenious water-cooling system for the valve seats. The cooling system provides a constant flow of cooling water against that portion of the cylinder block surrounding the exhaust valve seats, thus eliminating the threat of block warpage and valve pitting, and promoting long life at this point, it is claimed.

In addition, the new White motor is equipped with a heavy seven-bearing counterweighted crankshaft weighing 97 pounds. The seven main bearings have a projected area of 30.7 square inches. In the new engine, excessive wear on piston pins and bushings is prevented by rifle-drilled connecting rods which allow full-pressure lubrication to these vital points. Engine is mounted on four-point rubber mountings. A vibration damper smoothes out the power impulses.

The engine is equipped with a vacuum-controlled distributor which permits proper spark advance for every load and speed condition. An inlet manifold of the down draft type, properly proportioned to suit the engine, further enhances fuel economy by means of a hot spot, automatically controlled.

The frame which is almost eight inches in depth, has a 3″ flange. A new design rear axle, with straddle-mounted pinion and chrome-nickle alloy gears, is basically similar to the White full-floating axles which have done heavy-duty service in thousands of Whites of larger capacity.

Styled by Count Alexis de Sakhnoffsky, the new streamlined Model 700 will offer a choice of five different wheelbases, ranging from 136″ to 196″. The 700K tractor will be furnished in two wheelbases, 136″ and 148″. Safety features on the new jobs include four-wheel hydraulic brakes having 270 square inches of lining area; a motor of 70 horsepower developing 165 foot pounds torque; proper chassis weight to incorporate ruggedness of design; automatic air-ventilated cabs; thickly-insulated floor boards permitting a clean, fume-proof cab the year around; and a twin-lever steering gear which increases maneuverability and parking ease.



Major units of the new 700 Series Whites. Top, four-wheel, hydraulic brakes. Middle, the full-floating axle and springs. Bottom, the new 250-cu. in. "Pep" head engine.

Further detailed specifications are as follows: The engine, known as the new "White 250" is a 6-cylinder, L-head monobloc type, built with the patented "Pep" head combustion chambers. Bore and stroke are 3-7/16 x 4½ inches. Displacement is 250 cu. in. The compression ratio is 5.5 to 1. Brake h.p. is 70, developed at a governed speed of 2,600 r.p.m. Maximum torque is 165 lb.-ft. at from 800 to 1,400 r.p.m. A Zenith 1¼-inch carburetor of the down-draft type is used. Air-Maze air-cleaner is standard equipment. Fuel-tank holds 15 gallons and is mounted under the seat in the cab.

Clutch is the White 21A, dry, single-plate, 11″ in diameter, with moulded lining and automatic adjustment feature. Transmission is the White 45B, four-speed, fourth-direct, mounted as a unit with the engine and having helical counter-

(*Please turn to page* 76)

# 25 Models in 1937 Marmon-Herrington All-Wheel-Drives

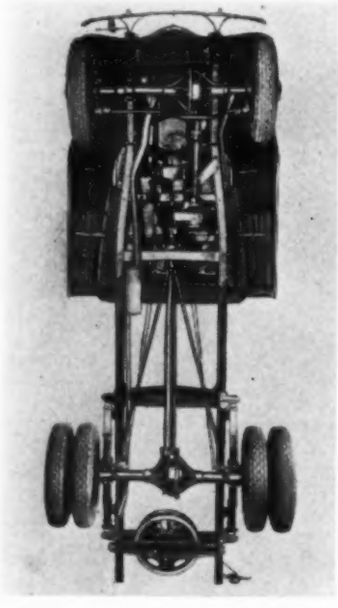
ALL-WHEEL-DRIVE performance and utility are featured in the 1937 line of Marmon-Herrington all-wheel-drive trucks and truck-tractors, just announced from the company's factory in Indianapolis, Ind.

As in 1936, this line has two separate divisions. The first is composed of 1937 Marmon-Herrington all-wheel-drive Ford V-8 models and the second is the regular line of Marmon-Herrington four and six-wheel-drive heavier-duty units completely manufactured by the company. In all models, however, Marmon-Herrington all-wheel-drive engineering construction is employed. In all, there are more than 25 models ranging in capacity from ½ to 20-tons. Specially-designed all-wheel-drive units to carry or pull heavier loads or to meet the requirements of specific jobs also are available.

After a long period of experimentation, Marmon-Herrington engineers decided more than two years ago that the Ford V-8 truck was ideally adaptable for an all-wheel-drive installation of the Marmon-Herrington type and that its performance, as an all-wheel-drive vehicle, would fill a hitherto unoccupied place in the truck field.

The 1937 V-8 truck is the third consecutive Ford model which has been made available as an all-wheel-drive. With each succeeding model, improvements and refinements have been made and the 1937 Marmon-Herrington all-wheel-drive Ford V-8 has many new features which further emphasize the utility of this combination.

In the new models, Marmon-Herrington is continuing its policy of engineering and building the necessary all-wheel-drive units into Ford V-8 trucks in its own factory, under the direct supervision of its own engineers. These units include a driving front axle, two-speed auxiliary transmission and many other parts, including semi-elliptic front springs.



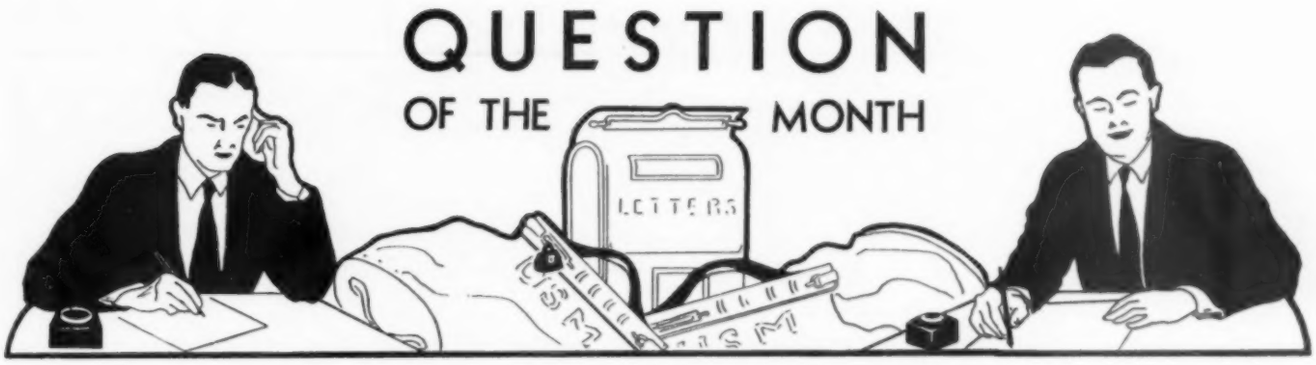
Worm's-eye view showing details of Marmon-Herrington's all-wheel-drive Ford V-8 truck chassis for 1937.

The line includes four four-wheel-drive models and two six-wheel-drive models, all of which are offered in two tire sizes. The line has been further augmented for 1937 by the addition of a Marmon-Herrington all-wheel-drive Ford V-8 on the 112-inch wheelbase light-delivery or passenger-car chassis. In this unit, Marmon-Herrington has engineered a driving front axle, a truck clutch with four-speed transmission, transfer case and three-point spring suspension, thus making a light and powerful all-wheel-drive passenger carrying or delivery vehicle. This model is represented in the upper right-hand illustration.

The driving front axle is of Marmon-Herrington design and characteristics. The auxiliary transmission, in combination with the standard four-speed transmission of the Ford V-8 truck, gives a total of eight speeds forward and two speeds reverse. The high range of speed is exactly the same as the standard Ford range. Thus, the normal road speed of the regular Ford V-8 always is available in addition to the off-the-road traction and performance made possible by the various combinations of speeds provided by the auxiliary transmission. The models available in the 1937 line of Marmon-Herrington all-wheel-drive Ford V-8's are as follows: Model C5-4 (four wheels driving, 6 tires) wheelbase 132″; Model C5A-4 (four wheels driving, 6 tires) wheelbase 112″; Model C5B-4 (four wheels driving, 6 tires) wheelbase 122″; Model C6-4 (four wheels driving, 6 tires) wheelbase 157½″; Model C5-6 (six wheels driving, 10 tires) wheelbase 154″; Model C6-6 (six wheels driving, 10 tires) wheelbase 179″; Model LD1-4 (four wheels driving, 4 tires) wheelbase 112″ Factory list prices begin at $1,375.00.

For 1937, Marmon-Herrington also offers its "C" series of four and six-wheel-drive units, these models

(*Please turn to page* 64)




# Fleet Practice *with Reference to* Governors

*(Here's How You Can Get the Complete Picture on this Controversial Subject:)*

BY popular request we are taking up the subject of Governors. The questionnaire below is the only practical means that we can employ to gather the necessary data from all sections of the country at one time. It is the first step!

In order to receive the complete data which this questionnaire will bring, it is necessary that you participate in our survey, by tearing out the blank, filling in the answers to as many questions as you can (or as you care to) and mailing it back to the Editor.

In return for a few minutes of your time, you'll get a private and personal copy of the summary, giving a representative picture of the subject under discussion. No names are ever mentioned in these surveys. Thanks, a lot, for your cooperation.—H. C. F.

*(Please tear out and mail to The Editor, The Fleet Owner, 90 West St., New York City)*

## Question No. 74—Engine Governors

What percentage of your fleet is equipped with Engine Governors? (Please indicate below)
Trucks, Tractors, etc. .....% Passenger Cars.....% Buses.....%

At what maximum speeds are your Governors set? (Please indicate below)
Trucks, Tractors, etc.....m.p.h. Passenger cars.....m.p.h. Buses.....m.p.h.

Are your Governors inspected regularly to insure against tampering? .....

What method of sealing (key, wire-seal, etc.) do you prefer? .....

What TYPE of Governor do you think is best for present-day fleet operation? (Please check below)
☐ Velocity type (manifold) ☐ Vacuum-controlled type.
☐ Centrifugal (mechanical type) Other types?.....

What MAKE of Governor do you think is best for present-day fleet operation? .....

Do Governors increase engine life?..... Do Governors increase vehicle life? .....

Do Governors reduce accidents?..... Do Governors reduce "tickets" for speeding?.....

If you have used Governors, please let us know whether or not any reductions in the following costs have been gained thereby, and approximately how much. (If figures are not available, just check where any reductions have been noted.)

General Maintenance Costs.....% reduction. Lubrication Costs .....% reduction.
Engine Repair Costs.....% reduction. Fuel Consumption Costs.....% reduction.
Tire Maintenance Costs.....% reduction. Brake Maintenance Costs.....% reduction.
Insurance Costs .....% reduction. Accident Costs .....% reduction.

Do you consider Governors as a "Safety Device," or as a "Maintenance Necessity"? .....

Any other advantages gained by Governors, that you can think of?.....

What are the disadvantages (if any) of Governors? (Please explain) .....

.....

How many vehicles in your fleet? (Please indicate below)
Trucks ..... Tractors..... Trailers..... Pass. Cars..... Buses..... Miscellaneous.....

***Note:** If you cooperate with us and fill out this questionnaire, you will be entitled to a tabulated report covering all of the answers.*

***Swap your Maintenance experience with other fleet operators in this easy, convenient way. We do the work. You get the benefit.***

*Name of Firm* .....
*Address* .....
*City and State* .....
*Your Name* .....*Position*.....

## Aluminum Bodies For Refuse Collection

NEW YORK CITY'S aluminum-bodied trucks for refuse collection, in the short time they have been in service, have proved highly successful. The new type trucks were adopted as a step toward reducing

the cost, which runs into millions of dollars a year, of collecting and removing garbage, ashes, rubbish, snow and dead animals.

Few people realize the immense proportions of this job. According to William F. Carey, Commissioner of Sanitation, an average of 5,000 truck-loads of refuse accumulates in New York every day; a one-inch snow fall necessitates the removal of 3,000,000 cu. yd. of snow; over 800 animals die in the city each day. Such figures indicate the magnitude of the department's job, which also includes 3,000 miles of paved streets and the treating of the city's sewage.

A number of interesting features were incorporated in the design of the new trucks to insure efficient operation, convenience in loading, utility and durability. The bodies are the largest ever built of aluminum alloys for this type of service. Their dimensions are 15 ft. 9 in. long, 7 ft. 8 in. wide and 6 ft. high; their capacity, 22 cu. yd. Weight, without hoist, is 2,700 pounds.

Low loading height was obtained by the use of special Autocar drop-frame chassis and by designing the bodies with side loading doors. When the body is filled to the door sills, it is tipped back, causing the load to slide to the rear and clearing the front for additional material. This method of loading assures a large and compact load. A top door is provided for loading snow.

The rear of the body is covered by a full tail-gate, hinged at the top and operated hydraulically from inside. The tail gate can be opened simultaneously as the body is dumped. Telescopic hoists raise the body to dumping position, and to insure self-cleaning, the bodies are 6 in. wider in the rear than in the front.

The aluminum bodies, fifteen in number, were built by Fitz Gibbon & Crisp, Inc., of Trenton, New Jersey, who also built five bodies of the same design of a high-strength steel.

For the sections of the aluminum bodies coming in contact with refuse, aluminum alloys containing small percentages of magnesium, chromium and silicon, and possessing resistance to corrosion were employed. The under-structures were made of structural and extruded shapes of the older duralumin type alloy. The acceptance tests specified that the truck be placed on two 12-in. blocks at opposite corners, loaded with 9 tons of material, and the body raised and lowered 25 times.

●

## New Battery Separator is Announced

AMONG the many interesting new developments released to the 1937 automotive market is a new type of battery separator, announced by H. H. Frey, vice-president in charge of sales for Globe-Union Inc., Milwaukee, Wis. The new separator is called "Spintex."

It is a rubberized fabric, ribbed, and looks very much like a standard cedar separator. The advantage of compactness, a highly desirable factor in favor of wood separators, is also an important point in favor of this new rubber material, it is pointed out.

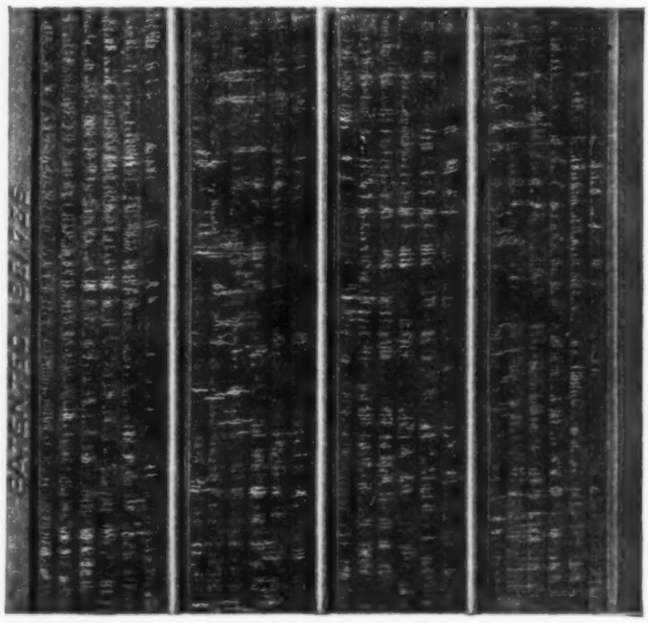
Among the other features stressed by the manufacturers are the following:

1. The high degree of porosity in the new separators permits free, fast circulation of the active power-creating materials.

2. Laboratory tests prove the presence of desirable enduring qualities which protect the plate materials over the entire life of the plates.

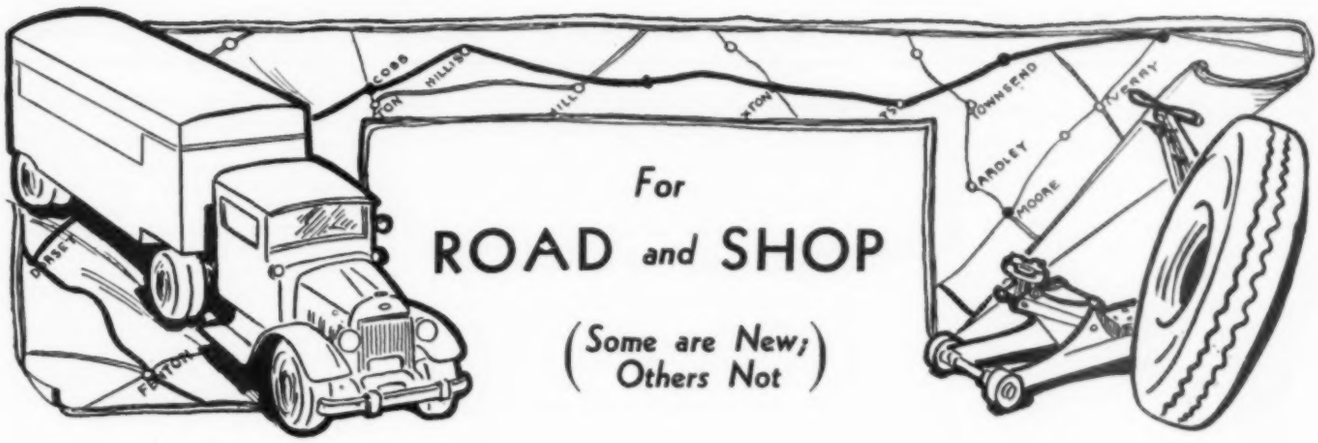
3. When plates buckle in extremely severe service, the new rubberized separators effectively withstand the pressure which is exerted against them.

4. One-sixth longer life is guaranteed in batteries having the new type separators.



In addition to new batteries with "Spintex" separators, the 1937 line of Globe batteries includes new numbers for the Ford V-8, Plymouth, and Chevrolet. These new batteries, developed exclusively for replacement service, offer starting capacities 50% to 100% higher than standard S.A.E. requirements, it is claimed.

A new booklet entitled "Spinning Power" fully describes the foregoing improvements. For your free copy address Globe-Union, Inc., Milwaukee, Wis. . . . Mention of FLEET OWNER is always appreciated.




# For ROAD and SHOP

## (Some are New; Others Not)

### "Wet-Type" Valve Refacer

THIS new Hall refacer is designed to reface valves of all types and sizes, including the recently adopted and increasingly popular Stellite-faced valves.

The grinder head and coolant pump are driven by a ¼ h.p., 6000 R.P.M. universal motor which develops ½ h.p. under load. A 1/6 h.p. universal motor drives the work head at a rheostatically controlled speed of 60 to 150 R.P.M.

The work head is doweled and adjustable to all angles up to 90 degrees and is equipped with a micrometer-feed adjustment so that the operator knows at all times just how much material is being removed from the face of the valve. This micrometer adjustment is also used when dressing the end of Ford valve stems to permit the removal of as little or as much metal as is necessary to provide the proper clearance between the stem and lifter.

Among the many features of this new refacer are: a diamond dressing attachment that may be used for dressing the wheel without removing the valve from the chuck; an enclosed light mounted directly over the grinding wheel; and a packless-type pump which supplies a stream of double filtered coolant to the work. This wet grinding principle insures a good finish without heating the valve head, eliminating the possibility of distortion, it is claimed. The coolant also keeps abrasives and grindings from the grinder head and other parts, where it might cause wear.

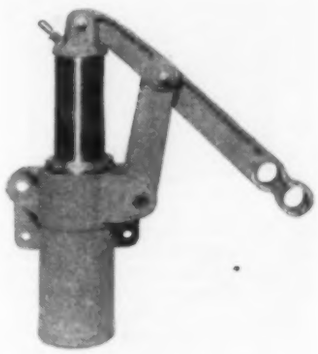
This new Hall valve refacer is a heavy-duty piece of equipment. Complete details may be obtained by writing the Hall Manufacturing Co., 1620 Woodland Ave.. Toledo. Ohio. . . . Mention of FLEET OWNER always helps.

### Double-Action Air Springs

THE Cleveland Pneumatic Tool Company, pioneer manufacturers of pneumatic appliances and vehicle suspensions, announces "Cle-Air"—a new double-action air spring, designed and engineered especially for use on the rear of trucks, trailers and buses.

This air *suspension* unit is of the pneumatic-hydraulic type, a compressed air cushion serving to absorb the road shock at impact, and a hydraulic recoil action affording absolute steel spring control under all conditions, it is stated.

The body of "Cle-Air" is attached to the frame of the vehicle by means of a suitable bracket, mounted in such a position that the rod connecting the actuating arm of the unit to the fitting on the axle is practically perpendicular. The piston in the unit has a 5-inch stroke; the end of the actuating arm has a travel of 10 inches.



When this unit is mounted with a normal static load, the piston is set at about ½-inch less than its mid-point and afterwards connected at its mid-point of stroke, thereby relieving to a certain extent, some of the load from the steel truck springs. In this case the relief is equivalent to about one-inch of deflection of the steel spring, due to the 2-to-1 leverage of the actuating arm. This one-inch deflection of the steel spring is equal to about 500 to 1,000 pounds, depending of course on the type of spring used.

The amount of load that can be carried by "Cle-Air" depends on the amount of air put into same. For example, on road testing jobs, a normal inflation pressure of 300 pounds per sq. inch, with a piston diameter of 2¾ inches, gave a total supporting load of approximately 1,800 pounds. On other test jobs the action was tried out under greatly varying load conditions and proved extremely satisfactory, it is claimed.

The makers state that "Cle-Air" can be mounted on practically any make or model of vehicle. Since the deflection curve for air is much gentler than that of steel springs, this combination of air and steel provides a much softer ride. The hydraulic control cushions against shocks and wipes out entirely the rebound tendency that would otherwise result. The latter is accomplished by hydraulic fluid transfer through a patented recoil valve.

Blue-prints and illustrated literature are now ready. They will be gladly sent to any operator on request, without obligation. Address Cleveland Pneumatic Tool Company, 3734 E. 78th St., Cleveland, Ohio. . . . Mention of FLEET OWNER always helps.

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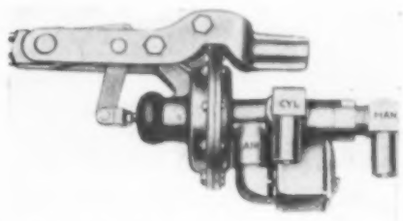
### Midland Foot Control Valve

A NEW compensating foot control valve that permits truck operators to apply frequent but light pressure on the brake pedal has been announced by The Midland Steel Products Co., according to H. E. Wright of the Cleveland plant.

This control valve is claimed to be especially desirable in heavy traffic when it is necessary to slow up without coming to a complete stop. This is made possible by a new arrangement of metering the vacuum in the power chamber gradually so that it does not reach its maximum until at least a pressure of about 50 lbs. is exerted on the foot pedal.



Complete details may be had without obligation by writing directly to H. E. Wright, Midland Steel Products Company, Cleveland, Ohio. . . . Mention of FLEET OWNER will be appreciated.

### Hoof Dash-Control Governor

A NEW "dash-control" governor is announced by Hoof Products Company, with which, by a single twist of the wrist, without moving from the driver's seat, the maximum speed of any vehicle can be accurately set.

The new type governor is available to fit all types of cars and trucks, and the dash-control can be incorporated into any "key-type" governor, the makers claim. They also point out that while this dash-control feature may not seem of pertinent interest to fleet operators, it can become a very valuable device, particularly where it is necessary to limit the speeds of certain drivers in the fleet; or in certain types of congested operation; or during certain seasons of the year when peak traffic conditions warrant it.

Further information, prices and fleet discounts may be obtained by writing to Hoof Products Company, 162 N. Franklin St., Chicago, Ill. . . . Mention of FLEET OWNER always helps.

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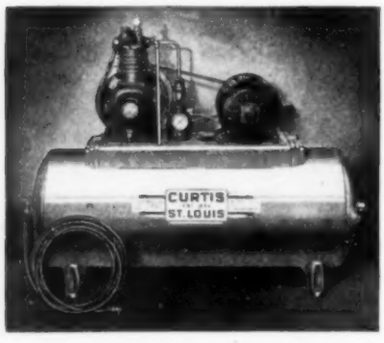
### Curtis Restyles Compressors

A NEW and restyled line of air compressors is announced by Curtis Pneumatic Machinery Co., St. Louis, Mo.

The restyled line incorporates all of the typical Curtis features, plus the following new ones: Convex ends on tanks; pressed steel base welded to tank; new universal motor mounting without cast-iron rails; flywheels




grooved for v-belt drive; clear-vision gauge location; drain-cock located high enough to accommodate bucket; metal conduit for wiring between motor and switch; and screw-type belt take-up.

Other features include new symmetry—added eye appeal—finer finish in black, red and gold. Complete information may be obtained direct from the maker mentioned above. . . . If you tell him you saw the announcement in FLEET OWNER it will help a lot.

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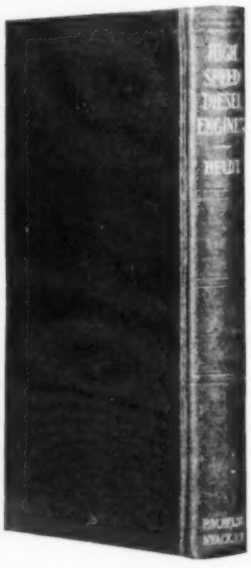
### New Heldt Book on Diesels

A NEW publication on Diesel engines is the text-book *"Modern High Speed Diesel Engines"* recently published by P. M. Heldt, Nyack, N. Y., who is also the author.

Mr. Heldt is known as one of the best automotive-engineering minds in the country and his book is one of the latest on Diesel engines that we have seen. It is, of course, quite technical in nature, but should interest the average fleet executive who has an engineering background.

Typical chapters include the following: Nature and Applications of the Diesel Engine; Thermodynamics of the Diesel Cycle; Combustion Phenomena; Diesel Engine Fuels; Atomizers and Sprays; Injection Pumps;



Governors; Pre-Combustion Chamber Engines; Direct-Injection Engines; Turbulence Chamber Engines; Air-Chamber Engines; Superchargers; etc., etc.

Practically all existing types of Diesel engines are discussed—both domestic and foreign. A chapter on operation and maintenance completes the book. It is profusely illustrated, with 250 illustrations. The price is $4.50. The publisher, mentioned above, will be glad to furnish copies on receipt of the price.

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### New Goodrich Batteries

NINE batteries in its truck and bus battery line for 1937—two light truck batteries and seven heavy-duty truck and bus batteries—incorporate the Kathanode type construction, it is announced by The B. F. Goodrich Company, Akron, Ohio.

The company also announced two new Kathanode passenger car batteries, the Kathanode Electro-Pak, and the Kathanode Ford-Terraplane type a short time ago.

Just as in the passenger car batteries, the Kathanode construction for truck and bus batteries uses flexible, porous, spun glass retainer mats to hold the active material in the positive plates. Use of the retainer mats also reduces internal resistance and improves the battery's starting ability, it is claimed.

In addition to the Kathanode batteries, the new Goodrich truck and bus battery line has a product for all types and models of trucks, buses, tractors, hearses and taxicabs.

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### New Grease Dispensers

THREE new grease dispensers are announced by Cincinnati Ball Crank Company. These consist of completely welded tanks, in light-weight design. Capacities will take care of 30-lb. or 100-lb. drum sizes. They have large openings for filling, detachable foot-pads, few moving parts and long handle for easy operation.

Model 140 is shown here. This is equipped with 5½-foot hose and bent nozzle, and is available with or without meter. It can be adjusted to give 1 pint of lubricant to 6 full strokes on the 30-lb. size, and 7 strokes on the 100-lb. drum size.

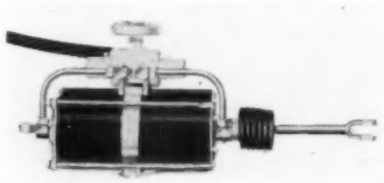
Model 120 is a gun-filler pump, designed to handle the most viscous of lubricants. It is also designed to accommodate a 30-lb. or a 100-lb. lubricant container and has a large opening for filling. Equipped with filling valve insert and screen assembly.

Model 130 is a spring packer pump, designed with straight side 30-lb. container and follow plate to handle graphite lubricants. It is equipped with 6-foot of hose and single straight swivel, with automatic anti-drip pin-type chuck. Can be used for universal joint lubrication when equipped with hydraulic adapter or oil nozzle. Also available in 100-lb. drum size.

For complete details regarding any of this lubricating equipment, address Cincinnati Ball Crank Company, Cincinnati, Ohio. . . . Mention of FLEET OWNER will be appreciated.

### Bendix Bus Door Control

THE new Bendix Door Control Unit, illustrated here, provides a simple and easily installed system of bus door operation. It consists of a sin-



gle vacuum power unit, including both power cylinder and control valve, and is installed adjacent to the doors. The control valve is of the solenoid type and has been developed especially for use in this unit. Electrical energy is used only to position the valve, the actual work being done by application of vacuum power to the door control linkage.

A single vacuum line leads from this unit to the intake manifold or vacuum reserve tank. Operation is controlled by two electric push buttons installed within easy reach of the driver. The only connection between the push buttons and the power unit is a pair of electric wires. Absence of tubing or mechanical linkage between driving compartment and control unit provides an exceptionally neat and economical installation.

In opening or closing the doors, the operator merely touches the proper button. He need not even keep the circuit completed during motion of the doors, since the control valve is automatically held in the selected position, once the button has been depressed. Vacuum power holds the doors securely opened, or closed, and electrical energy is consumed only when one of the push buttons is depressed.

For further details, prices and other data address Bendix Products Corp., South Bend, Ind. . . . Mention of FLEET OWNER is always appreciated.

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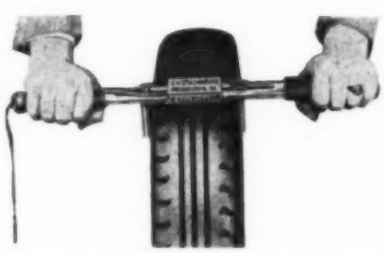
### Pull-Type Regroover



WITH the Stackhouse "pull type" electric tire regroover, all kinds of pneumatic tires may be regrooved, with either a straight circumferential tread, or any type of tread design.

This regroover will work on either inflated or deflated tires. It has adjustable roller guides, to insure straight lines when making circumferential grooves.

Hand grips are made of soft rubber, for a good grip. Wire leads are extended through the handle. Two types of heating units are available, giving 420 and 500 degrees of heat respectively. Blades are hand-ground from tough steel, and no sharpening is necessary, the makers state.

For further details, interesting literature and price sheet address E. H. Stackhouse, 219 N. 63rd St., Philadelphia, Pa. . . . Mention of FLEET OWNER will bring a speedy reply.

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### Catalog on 9-Inch Lathe

THE South Bend Lathe Works, South Bend, Indiana, have published a new 24-page catalog announcing their new 1937 model 9-inch Workshop Precision Lathe. Over 150 illustrations show the many new styles, features, and applications of the new back-geared, screw cutting lathe which is offered in seven different styles to fit a wide number of installations.

A number of pages are devoted to the various features of the lathe, with many illustrations showing the methods for obtaining and testing accuracy. Sixty-four major tests are made to insure accuracy in the alignment of all parts to within .001"

Several illustrations show the many new improvements on the back-geared headstock. These improvements include a twin gear reverse for right and left hand threads and feeds, large spindle bearings adjustable for wear, ball thrust bearing on the headstock spindle, take-up nut for eliminating end play of headstock spindle, hollow headstock spindle machined from a solid bar of alloy steel, etc.

Also shown are several types of installations of the lathe. These include industrial applications, auto servicing, home shops, laboratories, school shop installations, etc.

The 9-inch Workshop Lathe takes 38 different attachments for handling all types of metal work. A number of pages illustrate and describe these different attachments, which include: the draw-in collet chuck, turret, gear cutting, taper, indexing, milling and key way cutting, grinding, etc.

Readers wishing free copies of this new lathe catalog may write the Technical Service Department, South Bend Lathe Works, South Bend, Indiana, mentioning FLEET OWNER, if you please.

•

### Toledo Adds Aerotype Valves

THE Toledo Steel Products Company announces the addition of Aerotype valves to the Toledo Line for 1937. These valves are made from Ludlum Silichrome X, a new steel alloy highly resistant to burning and corrosion. This material was developed especially to meet the rigorous tests imposed by modern aeroplane engines.

Additional valve life is provided by application of Stellite, an exceptionally tough alloy, to the valve seats and valve stem tips.

The character of these recently developed valves makes them especially suitable for heavy-duty trucks and buses where battering, burning and corrosion are common troubles with ordinary valves, it is declared.

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### Streamlined Service Jack

A PRACTICAL application of streamlining is evidenced by the new S-13 hydraulic short floor-jack, introduced recently by Blackhawk. The S-13 has a capacity of two tons, a low saddle height of 3¾ inches and a maximum saddle height of 20 inches. Its maximum frame height is only 6 inches.

A new type power unit in this jack has eliminated several oil channels and made others more simple and direct. This development, along with a more finished construction and a new manufacturing process, removes the danger of having chips and burrs loosen and obstruct oil channels. The power unit is completely enclosed to prevent water, dirt, and grit from reaching working parts.

The 38-inch chassis length and the design of the handle pivot enables the jack to operate with a full pump stroke, while lifting modern beavertailed automobiles. The handle will

stand in a vertical position if desired, thus eliminating the trip-hazard in shops and service stations.

For literature, data and prices address Blackhawk Manufacturing Co., Milwaukee, Wis. . . . You'll mention FLEET OWNER when writing, won't you?

## Standards Sought for Gas Specifications

(*Continued from page* 38)

A second important property of gasoline is its volatility, the volatility requirement being determined by the fuel system of the power plant and by climatic conditions. If too much heat from the engine finds its way into the fuel system, the fuel may become overheated and may vaporize before entering the carburetor, with the result that "vapor-lock" occurs. Decreasing the volatility of the fuel minimizes this trouble. On the other hand, decreasing the volatility makes starting more difficult.

Therefore, for satisfactory operating conditions, it is necessary to control both the fuel-system temperatures and the volatility of the fuel, in order to obtain satisfactory starting and freedom from vapor lock. It is customary to adjust the volatility to the season and to the geographic location in order to obtain best results.

The extent to which volatility is varied to meet climatic conditions is shown in the following table, which has also been taken from the Bureau of Mines Report:

| | *Average Vapor Pressure Lb. per sq. in.* | *Average 10 per cent distilled temperature* |
|---|---|---|
| Houston | 6.8 | 142 |
| Los Angeles | — | 138 |
| St. Louis | 10.7 | 125 |
| Chicago | 11.5 | 119 |
| Minneapolis | 10.9 | 117 |

Vapor pressure is the criterion used by most of the automotive and petroleum industries to indicate the tendency of a fuel to vapor-lock. The ten per cent distilled temperatures indicate roughly the ease of starting a cold engine. The lower the figure the better the fuel in this respect. Examination of the figures clearly shows how the volatility is adjusted to suit the temperatures prevailing in each locality.

It is also important that the gum content of the gasoline be low enough to eliminate the possibility of sticking valves. In addition, the gasoline should be free from corrosive substances that might damage the fuel-induction system.

It will be obvious from these brief observations that the preparation of satisfactory specifications for gasoline for automotive equipment is a difficult task. This difficulty is accentuated by the wide range of temperatures that may be encountered in a single-day's operations of a vehicle, and by the fact that vehicles of all types and ages must be serviced. However, progress has been made, and it is expected that the preliminary recommendations of Technical Committee A will soon be made available for trial.

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## Machine Analyzes Night Accidents

(*Continued from page* 40)

safely persons can drive along lighted highways, as compared with unlighted highways, because of the fact that objects are brought into sharp silhouette and because glare from approaching headlights is reduced.

As a part of its night safety campaign, the Albany newspaper also sponsored a night safety slogan contest, awarding 34 prizes totaling $150 and ranging from a first prize of $50 to fourteen $1 prizes, and including floor, table, and student lamps.

"Better Light Means Better Sight, Betraying Dangers of the Night" won the $50 first prize. This was submitted by John Scymanky, of Albany. A group of prominent safety officials, Ernest Murphy, president of the Albany Safety Council; John E. Long, past president of the National Safety Council; W. E. Fitzsimmons, president of the Albany Chamber of Commerce; Ernest Manning, secretary of the Albany Automobile Club; and W. E. Vogler, Safety Engineer of Socony-Vacuum Oil Company at Albany, were the judges.

The Night Safety Analyzer, along with an Accident Meter also loaned by the Street and Highway Lighting Safety Bureau to point out fatalities, injuries and economic loss as a result of accidents, was on display at the W. M. Whitney & Company department store in Albany. To attract attention to the safety apparatus, the store ran a half-page advertisement in the Albany *Knickerbocker Press* the first day, while the newspaper carried daily stories about the exhibit.

Paul Goodell, Cincinnati traffic engineer, was in charge of the apparatus during the Albany campaign.

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## Luce Announces New "Merchandor" Body

(*Continued from page* 55)

have reason to believe that they will be well in line with conventional practice of Luce Manufacturing Company, so far as materials and fabrication are concerned.

We used the term "retail-delivery" body in our first paragraph only because it seems expressive of the type. The manufacturers point out that the field of use of "*The Merchandor*" lies in all types of retail and wholesale delivery where it is the custom to use chassis sizes from ½-ton to 2-ton capacity.

If you would like to get complete details of construction, the makes of chasses for which the new "*Merchandor*" body will be available, the cubic-feet payload capacities, prices and other information, please write directly to Luce Manufacturing Company, Lansing, Mich. . . . And if you mention FLEET OWNER, when writing, we will appreciate it very much; and so will the manufacturer.

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## Marmon-Herrington Offers 1937 Models

(*Continued from page* 58)

comprising the company's heavier-duty line which has been produced for a number of years. In regular production are twelve four-wheel-drive models ranging in capacity from two to ten tons and seven models driving through all six wheels and ranging in production from seven to twenty tons. A typical unit of this type is shown in the upper left-hand picture.

In all cases, front axle design is of the characteristic Marmon-Herrington type. All models have auxiliary transmissions of either two or three speeds forward and standard transmissions of either four or five speeds forward. Power is supplied through heavy-duty, six-cylinder engines ranging in power from 78 to 180 horsepower. All engines have seven main bearings. Westinghouse air brakes are standard equipment on some models while other models have brakes which operate hydraulically on all wheels.

The standard Marmon-Herrington line includes models that meet practically any need or requirement, it is declared. Sturdy frames, finger-tip steering, dual rear tires and many other features are found in the new "C" series. List prices of the "C" models begin at $2,490.

Interesting literature is now ready that illustrates and describes all the features of the Marmon-Herrington models for 1937. . . . For your free copy address Marmon-Herrington Company, Inc., Indianapolis, Ind. . . . Mention of FLEET OWNER always helps.

### Lintern Junior Sander

THIS new road-sander is offered as a protection against skids in slippery weather. The hoppers sit on the running boards of the car or truck, as shown in the picture. Three types of operation are offered: (1) hand op-

eration by driver; (2) automatic operation from stop-light switch, so that whenever the brake is applied, sand will flow; (3) a locked position on operating handle which enables driver to maintain an open sand valve for use on grades.

The hoppers are made of rust-proofed steel, finished in a prime coat, so that the user may finish them to match the body of car or truck. Sand capacity is 50 pounds. Shaped to fit body panel on inside. Four stud bolts in bottom permit easy mounting.

The sand distributor consists of a metal cone fitted into the bottom of hopper with molded flexible rubber hose having wide nozzle. Designed to prevent clogging and water creepage.

Complete unit includes two standard hoppers with valves and sand distributors, one electric unit control for 6-volt operation and sufficient wire for installation. For further details address The Lintern Corporation, Cleveland, Ohio. . . . Mention of FLEET OWNER always helps.

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### Shape Cutting Machine

INTRODUCTION of the new Oxweld Type CM-12 Shape Cutting Machine by The Linde Air Products Company makes available to the metal-working industries a machine designed to give accuracy and range of work in the flame-cutting process.

The flexibility of this machine allows almost limitless possibilities for its use, it is claimed. Any shape, from the simplest to the most complicated, can be accurately produced either automatically with templets or guided by hand. The immediate transfer of motion from one end of the machine to the other is a factor in assuring precision in all cutting operations.

In addition to cutting shapes of all description, the machine will cut straight lines automatically in any direction and at any bevel. Cuts as long as 144 in. are possible and an important feature lies in the fact that straight line cuts can be made at any desired angle in the horizontal plane. A special circle cutting attachment is also provided, thus enabling the automatic production of circles from 2 to 24 in. in radius. Still another feature is that of multiple cutting. The apparatus is designed to carry from 2 to 5 blowpipes which can perform multiple cutting operations under all the conditions possible with a single blowpipe.

Alloys have been utilized to establish an ideal strength-weight ratio combined with the necessary stability and rigidity of construction. Complete enclosure of the vital working parts insures correct lubrication and freedom from maintenance. The motor, rated at 1/3 h.p., produces adequate driving force and a speed range of from 1½ to 75 in. per min. All important controls have been duplicated so that operation is possible from either blowpipe or tracing position.

The blowpipes used have been constructed to give greater flame stability and increased economies in cutting. Material up to 12 in. in thickness can be handled; for heavier cuts a special blowpipe is available.

For complete information write to Linde Air Products Company, 30 E. 42nd St., New York, N. Y. . . . Mention of FLEET OWNER always helps.

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### Non-Skid Bars for Duals

A NEW item in the truck and bus field is the Tropic-Aire Non-Skid Bar for dual-tire operation in slippery weather. It is illustrated here.

The bars are drop-forgings, case-hardened. Chains are of steel, also case-hardened. As shown in the picture, one central chain is used, and the bars can be spaced as closely as desired. The bars are independent of the chains and can be placed instantly and shifted around at will, it is claimed.

Two sizes will fit 90 per cent of all dual-tire installations, it is stated. In operation the assembly will creep around the tire, thus preventing spotty tire wear. For further details, prices and fleet discounts address Tropic-Aire, Inc., 60 Eleventh Ave., N.E., Minneapolis, Minn. . . . Mention of FLEET OWNER always helps.

### New Goodrich Heaters

A NEW de luxe model boiler-type hot water heater is announced by The B. F. Goodrich Company, Akron, Ohio.

Built on the same principle as the hot water heaters in homes, this heater has a special heat trap providing full, steady heat even when driving at high speeds, and quicker speed at the start, the makers declare.

A new universal deflector throws heat in any direction or moves completely out of the way to provide a direct flow of warm air. An angle tube core, of long-life copper and brass construction and floated on rubber cushions to prevent rattles and leaks, has more heating surface.

Among other features are a new illuminated control switch, a new quick-starting, high speed motor, and the use of Goodrich braided hose. The de luxe heater is also equipped with connections for the Goodrich "Defroster," which keeps the windshield free from snow and ice.

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### Truck Brake Balancer

A LARGER model of the Evanwood Brake Balancer has been announced. This will take care of the larger trucks and buses with tires up to 46 inches in overall outside diameter.

The Evanwood Balancer provides a quick reading of conditions inside of the drum—mechanical or hydraulic brakes—it is claimed. It is simple and compact and is entirely portable. Application is made as shown in the accompanying illustration.

This brake tester was designed especially for fleet operators. No additional equipment is needed. With it, the operator may balance brakes; check brake lining; check drums and brake linkage; and make the necessary corrections. A simple dial reading shows just what is needed. Each wheel is tested separately and the tester will show up such conditions as out-of-round drums; high and low ceiling; worn lining; etc. Readings

are taken directly from the drum; not from the outside of the tire.

For further details and interesting literature address C. & C. Sales Corporation, 1775 Broadway, New York, N. Y. . . . Mention of FLEET OWNER when writing, sometimes helps to speed up the reply. We'd appreciate it.

# New Governors For Old Ones

To make it easy for every fleet owner to enjoy the sweeping and exclusive benefits of the new Handy Vari-Speed Governor, we announce a nation-wide Governor Exchange Program.

Any make of used governor will be accepted on an extremely liberal exchange basis.

Here is your chance to equip your fleet with this revolutionary new Handy, the Governor you've dreamed about, at absolutely minimum cost.

Remember, every Handy Vari-Speed covers full speed range with one adjustment—seals, locks, or adjusts and locks, if desired, from the dash—includes patent-protected features of stability and accuracy—is the only Governor built under the supervision of Arthur A. Bull, world's leading pioneer and expert in Governor engineering.

Ask your Handy Distributor about the Governor Exchange plan, for one governor or a thousand. Do so right away!

HANDY GOVERNOR CORPORATION
DETROIT

HANDY Vari-Speed GOVERNOR


### N. S. P. A. Elects New Officers

LEO F. HUNDERUP, assistant general manager of the Van Norman Machine Tool Co., Springfield, Mass., was elected president of National Standard Parts Association for 1937 at the Association's annual election held recently at Chicago. V. C. Hossellman of Siferd-Hossellman Co., Lima, O., was elected senior vice-president; and the choice for junior vice-president was L. G. Matthews, general sales manager, Sealed Power Corp., Muskegon, Mich.

Two new manufacturer directors were elected to the Board to replace directors whose terms expired. They are J. Harvey Williams, president, J. H. Williams & Co., New York City; and T. Latimer Ford, sales manager, American Hammered Piston Ring Division of Koppers Co., Baltimore, Md. C. C. Bradford, president, Eaton Products, Inc., Cleveland, O., was elected to the Board to fill the vacancy caused by the resignation of Frank C. Kip, president, Automotive Thrust Bearings Corp., Chicago.

New directors representing the wholesalers' division, elected at the annual meeting, were: M. F. Wible, vice-president, Air-Land Motor Parts Co., Greensburg, Pa.; R. B. McLure, vice-president, Parts Service Corp., Montgomery, Ala.; and David Ruskin, president, Sanders & Ruskin, Inc., New York City.

L. G. Matthews, junior vice-president, will again serve as chairman of the Manufacturers' Board of Governors, while V. C. Anderson, president, Motor & Axle Parts Service, Inc., Chicago, was elected chairman of the Wholesalers' Board of Governors, by his follow members.

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### GMC's "Parade of Progress"

THE new 1937 Parade of Progress Exposition, sponsored by General Motors, left Detroit on December 1 for an extended tour of the South, Southwest, and Pacific Coast. J. M. Jerpe, director, is in charge, assisted by Joseph P. Dever, and Harrison Warner.

The first showing of this improved "world's fair on wheels" was made at Pensacola, Florida. The present itinerary includes engagements at Mobile, Alabama; Biloxi, Mississippi; Gulfport, Mississippi; and New Orleans, Louisiana.

The caravan, comprising 34 automotive units operated by a crew of 50 men, proceeded to the Gulf Coast via Ft. Wayne, Ind., Louisville, Ky., Nashville, Tenn., Birmingham and Montgomery, Ala., traversing virtually the same route as last January to Miami, Fla., for the "world premiere" of the traveling exposition.

The 1936 Parade of Progress Exposition played its last times in October in Indianapolis, then returned to Detroit for changes which make the 1937 model even more competent to tell the story of the contributions scientific research and industry are making to better the lives of the individual citizens.

In the nine months' tour recently ended, this General Motors educational activity, which has been developed under the general supervision of Charles F. Kettering, has been exhibited in 40 cities in 10 South Eastern, Middle Atlantic, and Middle Western states to over 800,000 people, over a route covering some 6,000 miles.

The Parade of Progress Exposition makes no admission charge. It is operated by the General Motors Public Relations Department, of which Paul W. Garrett is director.

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### Trucks Help Demonstrate Tractors

MOBILE demonstration units, each bearing a Diesel tractor and tillage equipment weighing more than six tons, have recently been placed into service by Caterpillar Tractor Company, Peoria, Ill. . . . The units consist of two Federal tractors and two specially-designed Fruehauf trailers with special rack bodies, and rounded front ends.

### Ford Sets "Largest Goal" for 1937

THE largest truck and commercial car goal in the history of the Ford Motor Company has been set for 1937 at a recent meeting of commercial supervisors of the Company's 36 domestic branches at which sales plans were discussed. . . . The supervisors were greeted by W. C. Cowling, sales director, and D. J. Hutchins, in charge of commercial sales . . . Mr. Hutchins presided.

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### Gelpke, Coogan Promoted at Autocar

AUTOCAR announces the appointment of Adolf Gelpke as chief engineer, and of Edward F. Coogan as sales manager. . . . Both of these appointments are in line with Autocar's policy of promotions wherever possible. . . . Mr. Coogan was previously the assistant sales manager under H. M. Coale, vice-president in charge of sales. . . . Mr. Gelpke was assistant engineer under B. B. Bachman, vice-president of engineering. . . . Mr. Coale and Mr. Bachman will continue to head the sales and engineering divisions of the business.

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### Robt. A. Olen Joins FWD Advertising Dept.

ROBERT A. OLEN, son of Walter A. Olen, president of the Four Wheel Drive Auto Company, Clintonville, Wis., has been appointed manager of direct mail and motion picture development in the FWD advertising department. . . . Mr. Olen has been employed by the Company for 10 years, and more recently as a sales representative in the New York branch territory. . . . He is well known in sales and advertising circles in the east. . . . A. H. Rice, has been appointed assistant advertising manager for the FWD Company

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### S-W Forms Industrial Color Service

SHERWIN-WILLIAMS announces the formation of an Industrial and Transportation Color Service, under the direction of R. H. Hookway, Sherwin-Williams Colorist. . . . This new department combines its efforts with those of the S-W Paint Engineering Service, to offer designers, manufacturers and industrial consultants assistance, not only in developing desired colors and combinations for "dressing up" new or old products, but also information on types of finishes and their suitability for specific application requirements.

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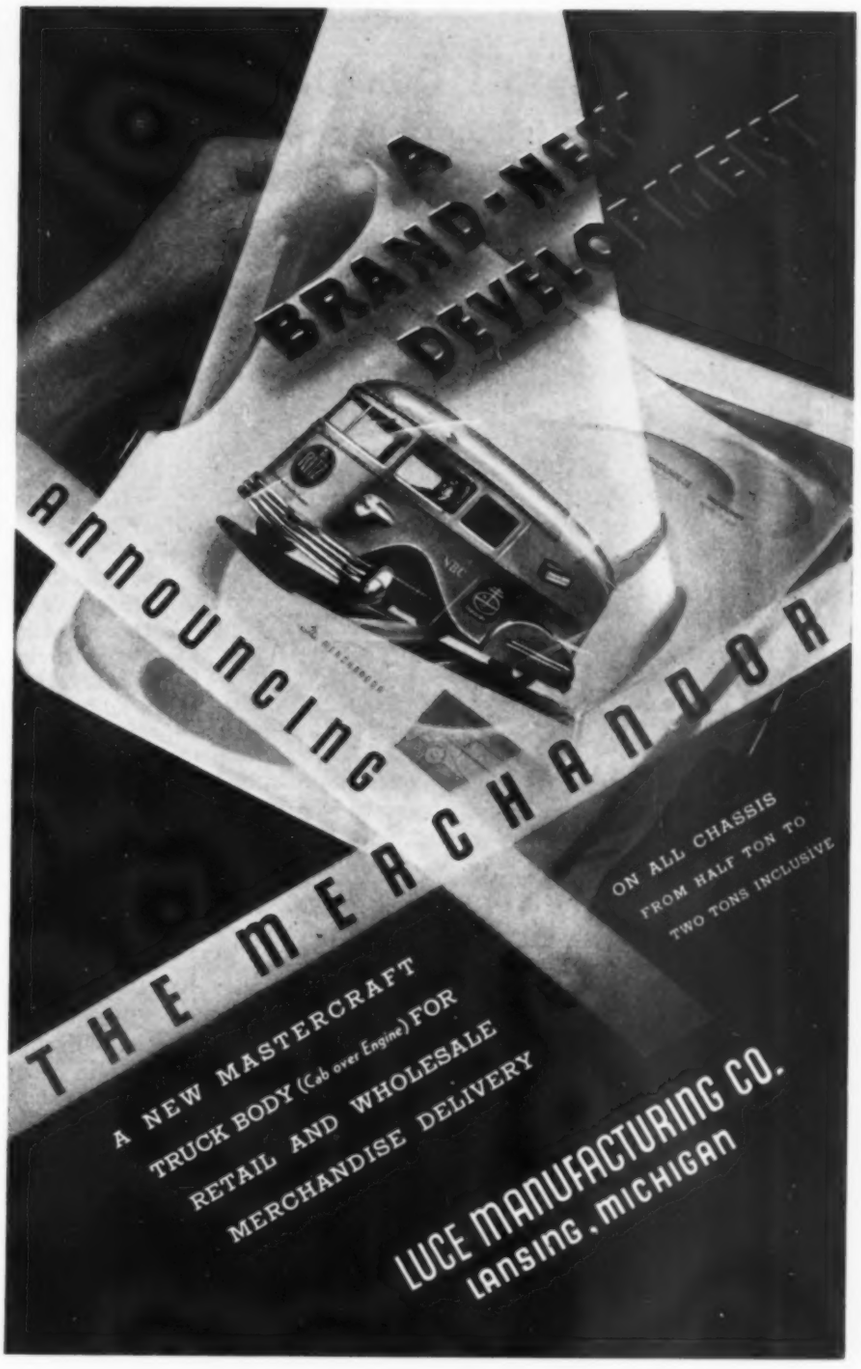
### N.S.P.A. Convention Successful

THE 13th Annual Convention of the National Standard Parts Association held recently in Chicago, climaxed what members concede to be the Association's greatest year, both in service and growth. . . . Two resolutions of importance were passed. One placed authority in the hands of directors to fix the time, location and nature of the 1937 Joint Trade Show. The other amended the by-laws to extend membership to manufacturers of such products as auto radios, seat covers, heaters and similar lines enjoying wide jobber distribution.


A BRAND-NEW DEVELOPMENT
ANNOUNCING
THE MERCHANDOR
ON ALL CHASSIS FROM HALF TON TO TWO TONS INCLUSIVE
A NEW MASTERCRAFT TRUCK BODY (Cab over Engine) FOR RETAIL AND WHOLESALE MERCHANDISE DELIVERY
LUCE MANUFACTURING CO.
LANSING, MICHIGAN

### Shuler Axle Opens Detroit Office

SHULER Axle Company, Louisville, Kentucky, has recently opened an office at 7-151 General Motors Building, Detroit, Mich., according to G. A. Dougherty, Secretary of the Company.

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### Ray D. Peo Now Autocar Vice-President

RAY D. PEO, who has been with The Autocar Company since 1922, has been promoted to the position of vice-president of the company. . . . Mr. Peo joined Autocar at Cleveland shortly after the world war, and was subsequently promoted to manager of their Toledo branch. Following this he was made manager of the larger branch in Columbus, Ohio, and since 1930 he has been District Manager, making his headquarters in Cleveland.

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### Gar Wood Promotes Robt. J. Grow

THE appointment of Robert J. Grow as manager of Gar Wood Industries' branch in Baltimore, Md., is announced by W. H. Hammond, sales manager of the hoist and body division. . . . Mr. Grow succeeds S. R. Faatz, who is no longer associated with the company. . . . W. S. Blakeslee assumes the position vacated by Mr. Grow in the general sales department.

**Even a slight DELAY costs more than a SLEET-MASTER BLADE**

Sleet—on the windshield of just *one* unit—can cost you more than Sleet-Masters for your whole fleet. Sleet-Master blades hook on *any* windshield wiper—the instant sleet strikes. They wipe the windshield *free* of sleet and frozen snow . . . without drain on battery or motor. Complete with TWO EXTRA RE-FILLS . . . in a handy box to tuck in car pocket or toolbox . . . they let your drivers SEE where they're going . . . through the worst sleet storm . . . at the lowest cost per mile. Get Sleet-Master blades—to keep your men ON schedule, and OUT of the ditch. At good automotive retailers and wholesalers everywhere. Write us for name of nearest jobber.

ANDERSON VISION-CONTROL PRODUCTS

THE ANDERSON COMPANY
GARY INDIANA

SLEET MASTER
STAINLESS STEEL
50¢
FITS QUICK ALL WIPER ARMS
ANDERSON VISION-CONTROL PRODUCTS
SLEET-MASTER*
COMPLETE WITH 2 EXTRA REFILLS
BE READY FOR SLEET!
FLEET MAINTENANCE EXECUTIVES
Ask us to tell you how Anderson Vision-Control Products—including TEN-EDGE Blades, FIVE-FEATURE Arms, and Twin Wiper Hook-ups—greatly reduce your replacement costs and operating hazards. The Anderson Company, Gary, Indiana.

2 EXTRA Re-fills—Above: Sleet-Master open, showing how easily stainless steel frame UNLOCKS to re-load. TWO EXTRA RE-FILLS with each blade—for heavy-duty sleet protection.


## Important Change in "F. O. B." Car Pricing

THE Automobile Manufacturers Association, through Alvan Macauley, President, recently announced a change in the policy of its members with respect to the prices at which their products are quoted in national advertising.

The new move is made to clarify and simplify the price situation. No price increase is involved. Mr. Macauley's statement is as follows:

"Effective at once, the members of the Automobile Manufacturers Association will adopt a more simplified method of pricing motor cars. However, the intent of this action is not to change the price the customer will pay, and, except for some very slight modifications incidental to the details of its application, the price the customer pays will remain the same as before.

"In the past, a list price, F.O.B. Factory, has been used in advertising. That list price did not include such things as a charge for preparing the car for delivery, reimbursement for federal tax, nor such accessories and extra equipment as the purchaser might have elected to buy.

"Effective at once, the new simplified price will be a 'Delivered Price' at point of manufacture, which *will include* the charge for delivery, reimbursement for federal tax, and all essential accessories, such as the spare tire and bumpers, which are now universally needed by all purchasers and have come to be known as standard equipment.

"To determine the retail price at any particular point of delivery, it will only be necessary under the new method for the purchaser to add the following charges to the advertised delivered price at the factory city—

1. Transportation from point of manufacture to point of delivery.
2. State and local taxes—if any—at point of delivery.

"Should the purchaser elect to buy a more comprehensive group of accessories, these will be available at prices to be quoted by the dealer.

"This pricing policy will go into effect immediately in newspaper advertising and as soon as it can be accomplished in national advertising.

"As stated above, this change is one of method only and, although it will cause practically no change in the retail price of the car to the purchaser, the new advertising will make it possible for the prospective buyer to determine more closely the total price of any particular car."

●

## Idaho Highway Department Uses Diesels

THE Highway Department in the State of Idaho has recently converted an FWD and an Autocar from gasoline to Diesel power, and will place both of these units in combination snow-removal and highway maintenance work near Shoshone.

James Jewell, Equipment Superintendent for the State, has been carrying on some experiments for the last few years with these combination general-utility and snow-removal units that have been found to be particularly useful because they may be used during all twelve months of the year. Installation of Cummins HB-4 engines in these two units is their first step toward reducing operating expense on their trucks.

The two units recently converted may also be used as graders and can likewise pull scrapers. This greatly widens their usefulness and is representative of the progressiveness of Idaho's road department.

### "Spintex" Battery Separators

AMONG the many interesting new developments released to the 1937 automotive market is a new type of battery separator, announced by H. H. Frey, vice-president in charge of sales for Globe-Union Inc., Milwaukee, Wis. The new separator is called "Spintex."

It is a rubberized fabric, ribbed, and looks very much like a standard cedar separator. The advantage of compactness, a highly desirable factor in favor of wood separators, is also an important point in favor of this new rubber material, it is pointed out.

Among the other features stressed by the manufacturers are the following:

1. The high degree of porosity in the new separators permits free, fast circulation of the active power-creating materials.

2. Laboratory tests prove the presence of desirable enduring qualities which protect the plate materials over the entire life of the plates.

3. When plates buckle in extremely severe service, the new rubberized separators effectively withstand the pressure which is exerted against them.

4. One-sixth longer life is guaranteed in batteries having the new type separators.

In addition to new batteries with "Spintex" separators, the 1937 line of Globe batteries includes new numbers for the Ford V-8, Plymouth, and Chevrolet. These new batteries, developed exclusively for replacement service, offer starting capacities 50% to 100% higher than standard S.A.E. requirements.

A new booklet entitled "Spinning Power" fully describes the foregoing improvements. For your free copy address Globe-Union, Inc., Milwaukee, Wis. . . . Mention of FLEET OWNER is always appreciated.

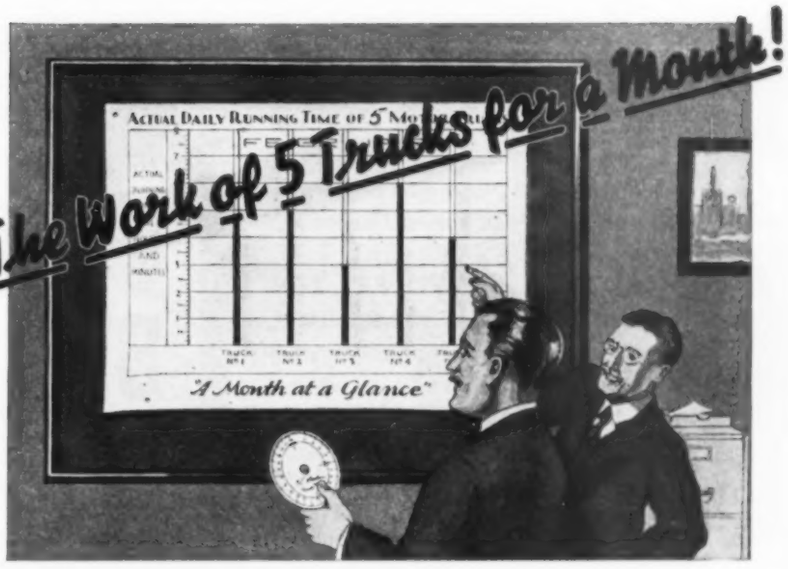
•

### Bushing Catalog Issued

A NEW catalogue of graphite bronze bearings with a marginal thumb index of standard sizes has recently been issued by the Randall Graphite Products Corporation, of Chicago. The marginal index was worked out for the convenience of manufacturers, engineers, and designers of new machine equipment and particularly for engineers, superintendents and shop foremen in charge of bearing replacement work.

The catalogue lists inside and outside diameters and lengths of all standard bronze graphite bushings and sheave bearings. The inside diameters are shown in the marginal index for quick reference.

The catalogue also gives figures on inside diameter reductions for press fitted bearings. Also briefly described are the new Randall reservoir graphite bronze bushings and thrust washers, together with illustrations of Randall pillow blocks. . . . For your free copy of this new catalog address Randall Graphite Products Corp., 609 West Lake St., Chicago, Ill. . . . Mention of FLEET OWNER always helps.


How Much of the Day is Each Truck **ACTUALLY RUNNING?**

• That's really the answer to the question: "Are my trucks efficiently operated?" Not how many miles—but *how busy*, every day and all day.

***Very Few Know***

the answer to that question, yet it is the most important information of all—idle time, delays, waste, etc. Well-organized concerns are beginning to feature this "busy-idle" information in their records. The best way of all is to make a graphic picture of it as shown above, obtained from the charts produced by the *Servis Recorder*—all running time and standing time, day or night, for a month.

One picture is worth a thousand words, or a thousand figures for that matter. Suppose you are operating five trucks and were shown a graphic chart like that pictured above. Would it not mean more to you than all the figures that your bookkeeping department could produce?

***That Wall Chart***

represents a week, or even a month of truck operation, and can show the comparative performance of a whole fleet at a glance. Then you'll know where to correct abuses such as idleness, avoidable delays, faulty routing, unnecessary overtime, speeding, accidents, etc.

*Write for our SKY-LINE Chart and also our free booklet "Ten Ways of Getting More Work Out of Motor Trucks."*

**THE SERVICE RECORDER CO.**
1422 Euclid Ave., Cleveland, O.

**The Servis Recorder**
**Tells Every Move Your Truck Makes**


### Folder Describes "Paintgrip"

A FOLDER describing the advantages of Armco Galvanized Paintgrip sheets has recently been issued by The American Rolling Mill Company of Middletown, Ohio.

Paintgrip is a new Armco galvanized sheet metal that is readily paintable without special acid treatments or weathering, it is claimed.

Forming qualities, soldering practice, welding, cleaning and finishing operations are described in the folder.

Paintgrip is available in base metals of Armco Ingot Iron, copper-bearing steel or plain steel. . . . For further details and free copy of the folder, address the firm mentioned above. . . . You'll tell them you saw it in FLEET OWNER, won't you?

•

### FWD To Exhibit At New Orleans

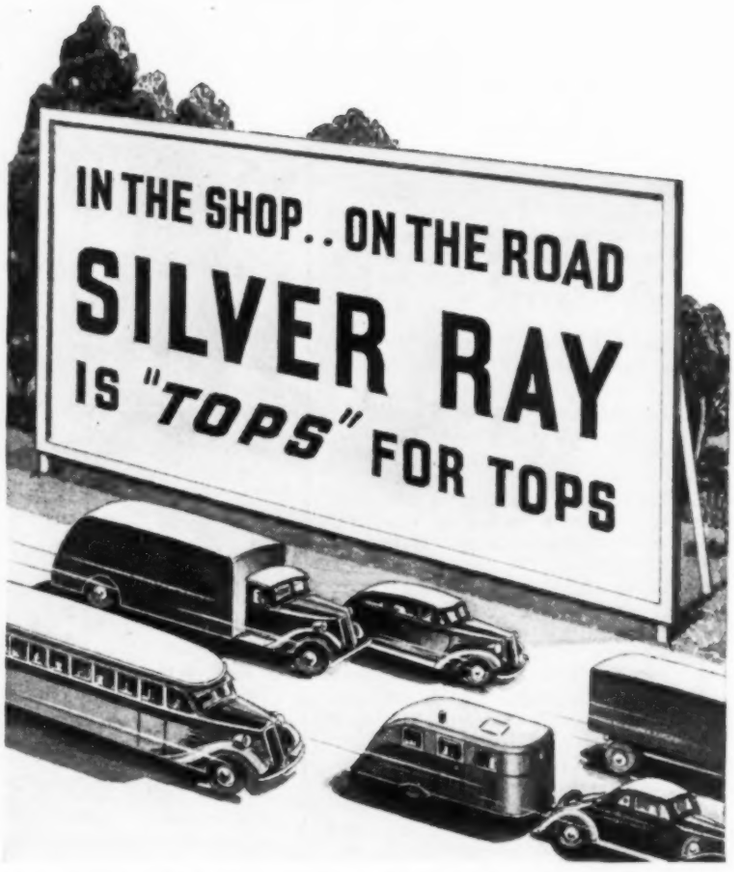
A PHOTOGRAPHIC display of new models, current installations, and the FWD's adaptability to a wide range of operating conditions will be exhibited from January 11 to 15 inclusive, at the New Orleans American Road Builders Association Show. . . . The exhibit will be sponsored by the Four Wheel Drive Auto Company, Clintonville, Wis., and Kitchener, Ont., Canada, makers of FWD trucks.

YOU'LL economize in the shop with SILVER RAY TOP FABRIC because it is so pliable and easy to handle that you can speed up your top jobs and reduce your labor costs. And you'll always save money in the end because, together, SILVER RAY TOP FABRIC and SILVER RAY TOP DRESSING make a strong, attractive silvery top that will not crack or leak and that will stand up longer in actual service. Both fabric and dressing were *specifically "engineered"* for use as top material for buses, trucks and trailers. *Complete details with samples and prices on request.*

*Sole Distributors:*
**BRIDGEPORT COACH LACE CO.**
**Bridgeport, Conn.**

*Made by*
**WM. E. HOOPER & SONS CO.**
**PHILADELPHIA**

Makers of the famous HOOPERWOOD line of industrial fabrics including FIRE CHIEF, the new fire-resistant canvas for every purpose, and Hooperwood Waterproofed Cotton Duck for Truck Covers, Tarpaulins and Tents.





## Maintaining a Small Coal Fleet

(*Continued from page* 24)

crankshaft, a badly worn transmission or rear axle, etc., would be more than wiped out by the disruption of schedules and out-of-service time sure to follow.

Our policy with engines is to run them as long as possible with such minor repairs as valve grinding, replacing rings, water pump parts, and adjusting bearings. When this is no longer effective we find it better to remove the engine and give it what amounts to a complete rebuilding. Reboring and like work is farmed out. Such work is let out on *quality* only and we insist that our own specifications be followed.

Trucks are painted in our own shop and a job lasts from two to four years. This is also done during the above lay-up period.

Except the smaller units in the lower price class few trucks are traded, the usual practice being to run them as long as they can be operated efficiently and then scrap them, saving any parts that may be used on other trucks. This means that during the life of a vehicle we may replace any one or several of its separate units, when these become unfit for use from wear or obsolescence.

For instance two 4-cylinder engines were recently replaced. One of these in a two-ton job was replaced with a new 6-cylinder; the other, a five-ton, was replaced with an 8-cylinder engine. The latter is illustrated on page 22. Trucks were seven and nine years old at the time and while speedometer records were lost, they had traveled something over 125,000 miles at the time. To those accustomed to long distance hauling this may not seem like a lot of miles, but coal truck operation in city and suburban territory does not pile up the miles so fast, nor is it conducive to long-mileage-life.

These older jobs are kept modernized as far as possible; solid tires have long since been changed to pneumatics and starters and other electrical equipment have been added; also fuel pumps, oil-filters and air cleaners in some cases. Brakes have been the toughest problem, but the use of cast-iron drums and modern linings, redesigning of brake hook-ups and in one case the installation of a power brake, have enabled us to keep up with to-day's speed and traffic conditions.

Any major changes or replacements are not to be confused with repairs, however, and the truck must be otherwise sound and worth the investment; its probable life and efficiency as a transportation unit after the job has been completed must be taken into consideration, together with the cost of keeping it in service as compared with that of replacing it. In other words, such replacements are in effect capital expenditures, and must justify themselves as such.

Road failures, while impossible to eliminate entirely, are comparatively few with this set-up and are mostly of a minor character. Out-of-service time during busy seasons has also been reduced to a minimum.

Constant checking and inspection of all chassis parts also eliminates many accidents by catching them before they happen. Steering knuckles on one or two jobs are periodically inspected for crystallization, using a low-power microscope and the old "oil-and-hammer" tests; during the past two years two have been discovered in a dangerous condition and replaced. All steering parts on trucks that reach the general overhaul stage are also subjected to a searching inspection and if the least doubt exists are replaced. (*Cont. on next page*)

We try to promote safety in every way possible and treat it not as something to be preached and prayed for, but as something that is a definite part of the day's work and must be achieved as a matter of course. With the cooperation of all concerned we have built up a record during the past ten years that we are proud of rather than not.

Our plan of maintenance, therefore calls for keeping them in efficient running condition, keeping them up-to-date, and above all, keeping them *on the road* when they are needed!

●

## Brewery Has a Simple Record System

(*Continued from page* 26)

typical chart from one of which is reproduced at the head of this article.

This particular chart shows that the truck left the garage at 8:00 A.M., was at the brewery yard at 8:10 and then the engine was stopped until it was started off on its route at 9:00. In addition to indicating all stops during the day, it shows that the driver stopped for lunch at 12:05, returned to work at 1:05, reported back at brewery at 4:30, and checked in and left for garage at 5:25.

With such a chart, a pretty accurate check on what is being done by each driver throughout every working day is possible. Too much time for stops, accidents (shown by sharp jog), and too much idling are especially spotlighted.

Each driver is provided with a helper. The men are paid straight salaries and are union men. They wear blue uniforms, on each side of which is stitched the word "Harvard" and also the man's first name, as for instance, "John" or "Eddie". Each truck averages about 40 stops a day and 200 miles a week.

The Harvard Brewery was established in 1893. Its plant has been completely modernized and its present capacity is 500,000 barrels a year. It is one of the largest breweries in Massachusetts and claims to have the largest aging capacity in all New England. Seventy-five per cent of the output is draught and twenty-five per cent bottled beer. The products include beer, ale, double ale, porter and season Bock beer; also October ale. Water is obtained from the company's own artesian wells, which are 70 feet deep and tap the prehistoric Merrimac River.

●

## Taxes Prove Big Item in Delivery Costs

GASOLINE taxes have become one of the important costs of distribution which business men must consider when setting the price of their products to consumers, an analysis made recently by a large retail organization shows. The analysis revealed that gasoline taxes increased the company's distribution costs by $61,766.44 last year.

This company, which retails an article of daily use to more than 1,000,000 American homes in 43 states, found that gasoline costs—one of the larger expenses in operating its fleet of 1,600 delivery cars and trucks—were increased 38½ per cent last year by federal and state gasoline taxes. The company paid, on the average, $100.26 per vehicle for gasoline and $38.60 for gasoline taxes.

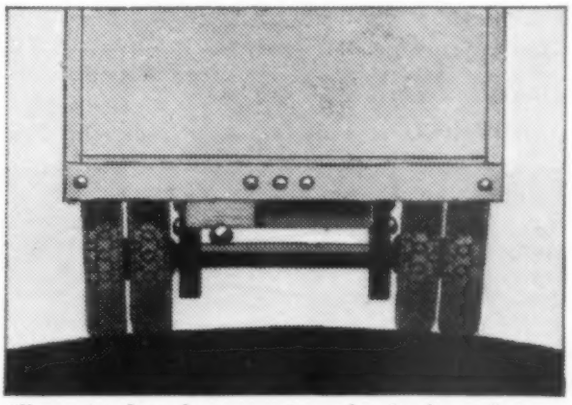
Gasoline tax payments would have been sufficient to purchase a 3½ months' fuel supply for the company's entire delivery fleet!


# SAVE MONEY BY SWITCHING TO THIS ULTRA MODERN AXLE TODAY

When your ordinary trailer axles fail in service why invite the same condition to repeat itself by replacing them with old type equipment? Conventional axles with integral wheels cost haulers huge sums in early tire wear and gasoline loss. But the modern Detroit Compensating Axle will more than pay for itself in tire and gasoline savings. In the long run it doesn't cost you a dime. Here are the reasons:

**1.** The design of this axle provides an automatic camber which insures each tire having full and square contact on any normal road crown.

**2.** Free rotation of the differential wheels prevents tire drag or scuffing. This also means less draw-bar pull, resulting in marked gasoline savings.



*Illustrating how the automatic camber fits the road crown*

Each time this ultra modern axle travels approximately 150,000 miles it saves at least *2 sets of tires.* It has then *more* than paid for itself, and after that still continues to earn substantial profits.

For complete information write or wire the

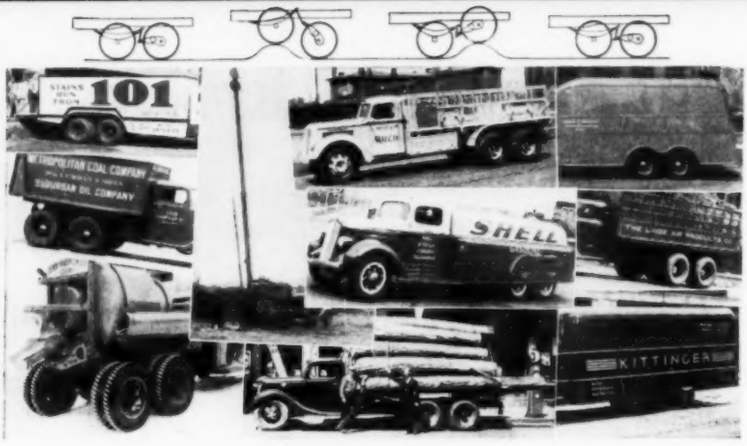
DETROIT **COMPENSATING** AXLE CORP.

Compensating Axles and Differential Wheels

*481 Beaufait Ave. • Detroit, Michigan*

# TRUXMORE

WORLD'S BEST 3RD AXLE




## AMERICAN INDUSTRIES ENDORSE IT

Maintenance Superintendents whose business it is to find ways and means of *Reducing Hauling Costs* are turning to TRUXMORE—

Other men whose *Income Depends* on Low Cost of Operation are doing the same.

## HERE'S WHY . . .

*First Cost is about ½ that of Heavy Motor Trucks of Equal Capacity*

*Operating Costs are in many cases halved*

*Earning Power is Doubled (Sometimes Even More)*

*Service is Greatly Improved (Less Running Time)*

You too can enjoy these money making advantages in your business.—Why not write today for your copy of detailed information about TRUXMORE. Address Dept. B.

*TRUXMORE is made in 5 sizes to fit ALL Trucks*

New York
Syracuse, N. Y.
Binghamton, N. Y.
Rochester, N. Y.
Erie, Pa.

1791 FILLMORE AVE.
TRUCK EQUIPMENT CO. INC.
BUFFALO, N.Y.

Chicago, Ill.
Philadelphia, Pa.
Pittsburgh, Pa.
Boston, Mass.


### Schneider Eastern Rep. for Timken

TIMKEN-Detroit Axle Company announces that Harry Schneider, Jr., has recently been appointed as eastern representative, and will contact distributors in New England, Eastern New York and Coastal States, including Virginia. . . . Mr. Schneider has been associated with the automotive industry for the last 20 years and is thoroughly familiar with the problems of motor truck transportation and maintenance.

•

### Ford Eliminates "F.O.B." Advertising

FORD Motor Company, early in December, adopted the policy of eliminating all "F.O.B." and "factory list" prices from Ford and Lincoln advertising, effective throughout the United States. . . . The new method of quoting prices will not change in any way delivered prices to the dealer or fleet operator. . . . Any prices stated in factory advertising will be the delivered prices at Dearborn, Mich., without taxes, the factory declared recently.

•

### FWD Speeds Up Production

WORKING day and night to meet the demand for FWD trucks by highway and commercial fields this Winter, the Four Wheel Drive Auto Company's factory at Clintonville, Wis., is speeding up production of all models. . . . Reflecting an encouraging upturn in business, the Company's factory personnel for December has been increased 20 per cent above the December, 1935 total, employment records indicate.

•

### Magnus Appoints Three Representatives

MAGNUS Chemical Company, Garwood, N. J., announces three appointments as follows: William Rein becomes resident sales representative in the southern part of Florida. . . . Leon Smith becomes resident sales representative, covering the state of Maine. . . . Arthur Eckhardt will represent Magnus in Texas. . . . All three men have had much previous experience in the industrial field. Magnus manufactures cleaning materials, industrial soaps, sulfonated oils, emulsifying agents and metal-working lubricants.


# -SAFETY- IS ECONOMY

## DIETZ "PILOT" DIRECTION SIGNAL

TWO-WAY LITE FLUSH MOUNT LITE

YOU get the SAFETY that is truest ECONOMY in this superior approved signal. Uses four Lites, placed one at each corner of truck or bus. Operation is through a control box on the steering column. The Control Box is completely assembled at the factory, therefore saves on usual installation time and cost. Lites made in 3 models—Standard, Two-Way and Flush Mount. We also manufacture "Beacon" Dual-Lite Direction Signals.

*Send For Catalog*

DIETZ

R. E. DIETZ COMPANY
NEW YORK

Pioneer Makers of Vehicle Lamps
Founded 1840

## Modernizing a Bottled-Goods Fleet

(*Continued from page* 28)

also shown, gives you a very good idea as to how we have utilized the roofs of these trucks for advertising purposes. In addition to serving as a good advertising medium, the roof also serves as an excellent insulator against heat in the summer, and protects the top deck of cases. Aluminum paint, of course, is used for this purpose.

Although we have not had these tractor-semi-trailer combination units in operation long enough to find out whether their operating cost will be satisfactory or not, we do believe that we have something quite practical, and that we have equipment which will attract attention wherever it goes, without in the least bit being freakish.

I might state, in conclusion, that the arrangement of this equipment was worked out by The White Company's branch in Birmingham, Ala., in conjunction with the distributor for Fruehauf Trailers, and two local body manufacturers—the Alabama Truck Equipment Company and the Cruse-Crawford Manufacturing Company. We shall be glad to furnish further information on request.

●

## Shell Adopts Light Six-Wheelers

(*Continued from page* 30)

ft. All are fitted with cab heaters and windshield defrosters for safety and driver's comfort.

The later issues of this truck model are turned out with complete fuel-oil meter installation and a 45-gallon bulk kerosene tank, transforming each unit into an alternate all-use truck equipped either to pump fuel or deliver gasoline via gravity feed.

Tank-wagon customers and dealers in five Shell divisions have already had the opportunity of inspecting and receiving deliveries from this new fleet of 16 low-bodied, 1,200-gallon tank-trucks, and all seem unanimous in their good opinions of them. A unit typical of this new fleet is illustrated. This particular job operates in the Binghamton, N. Y. district.

The decision to build this fleet—equipped as it is for greater speed, safety, comfort, convenience and cleanliness in the delivery of fuels and supplies—is the result of experiments conducted during the past two years under the direction of Capt. G. E. Gray, Automotive Manager.

●

## Do Not Mix Hypoid Lubricants

MORE than twenty models of 1937 cars are using hypoid gears in the rear axle. These models are made by eleven different car makers, six of whom have never used this type of gear previously. Included in the list are several makers at the head of the production list. Some or all of the models of the following makes use hypoid gears: Buick, Cadillac, Chevrolet, Chrysler, De Soto, Dodge, La Salle, Packard, Pierce-Arrow, Plymouth and Studebaker.

Hypoid gears require a special hypoid lubricant. There are a number of different hypoid lubricants on the market which have been approved for use but, due to the different chemical make-up of these lubricants, different brands should not be mixed together, as serious damage may result.

All car manufacturers and petroleum companies recommend a complete draining, flushing and refilling with all new lubricant to avoid any possibility of damage due to mixing.


Simplify "Tune Up"—
Save Fuel—

*with the*

**ENGELHARD EXHAUST GAS ANALYSER**

*THE Engelhard Exhaust Gas Analyser is the Standard by which others are judged!*

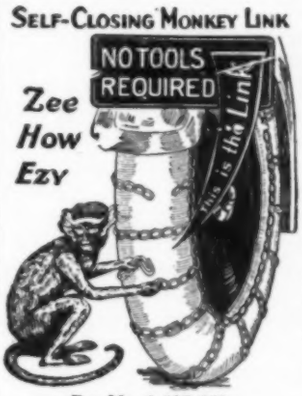
MANY major companies are using the Engelhard Analyser as the "standard" for Exhaust Gas Analysis. . . . As pioneers in this field, we have had several years of experience.

*Save Gasoline by Proper Carburetor Adjustment!*
*Use Engelhard, the instrument which really gives results!*
*Write for Free Illustrated Bulletin*

**CHARLES ENGELHARD INC.**
**90 Chestnut Street,**
**Newark, New Jersey**

*Manufacturers of Stationary and Portable Analysers and Tellite Panels*

SELF-CLOSING MONKEY LINK




Pat. No. 1,438,560
Trade Mark Reg. in U. S. Pat. Office

*FREE Samples*
To Fleet Owners
Self-Closing Monkey Links

Write us for free samples, state how many trucks there are in your fleet and what size they are. We will mail samples immediately.

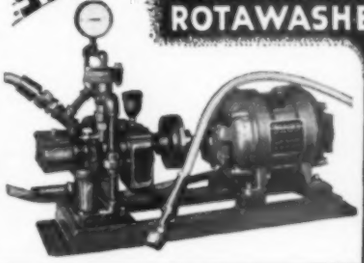
**Why Buy New Chains?**
**Repair With Monkey Links**

Your chains aren't worn out when the cross links start to let go. Repair with Monkey Links. Your drivers can do it on the road. No tools required. No appreciable time lost. Chains as good as new. Save money. Increase safety Send for your FREE SAMPLE now.

Flower City Specialty Co.
ROCHESTER, NEW YORK
At All Reputable Jobbers

Bring your cleaning up to streamline standards with the new speed washing!

SPEED WASHING
IS HAD ONLY WITH
ROTAWASHER



CLEANS CARS BUSSES TRUCKS FASTER BETTER
Send for details

**THE ROTAWASHER CORP.**
Dept. FO. 118 E. St. Clair Ave. Cleveland, Ohio

THE special honeycomb construction of the Spongex Sponge Rubber Seat Cushion for Trucks and Buses, gives exceptional riding qualities.

The total air space within the cushion is so great, that there is no "packing" of the rubber under the severest shocks. Vibration is effectively absorbed, too. Spongex Cushions have no metal in them—removing all danger of injury. They can be counted on to last as long as the vehicle in which they are installed.

*For Prices and Description Address Dept. F*

**SPONGE RUBBER PRODUCTS CO.**

**DERBY, CONNECTICUT**

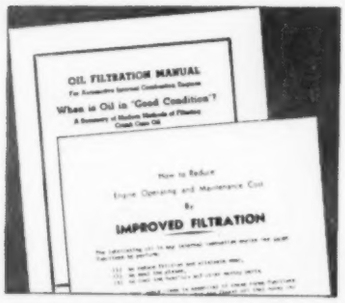
## Governors Assist Proper Break-In

THE modern adjustable governor can be used as an effective means of making certain that the truck is "broken in" properly, states Arthur A. Bull, President of the Handy Governor Corporation. "It is a well-known fact that a large part of the story of the performance of a motor truck is told in the first few chapters of its existence," states Bull. "The difference between the future performance of two trucks—one of which is 'broken in' properly and the other handled carelessly when new—is amazing. In all too many instances brand new trucks are placed in the hands of drivers who either through carelessness or indifference, neglect to take the proper precautions as regards the speed of the new vehicle. The result is a truck which costs too much to operate during its entire existence.

"The latest governors can be used very effectively for controlling speed during the 'break in' period. Governors are now made with such a wide range of speeds that it is possible with the same governor to make any adjustment desired for the vehicle. With the new type of unit it is possible in one governor to adjust for a range of from 1200 to 3400 r.p.m. With this wide range it is possible for the truck operator or fleet owner to follow the recommendations of the engineering department of the factory from whom he purchased his trucks. The new vehicle can be placed in service and governed to the recommended speed with the adjustment gradually being raised as the truck is 'broken in'. Trucks handled in this manner will return to their owners a much greater dividend of service than those which are 'broken in' in a haphazard manner. A far better fit of pistons in the cylinder bores is secured and better bearing surfaces are created on trucks which are 'broken in' properly."

**THESE 2 MANUALS FREE!**

**Each Shows How You Can Cut Motor Maintenance and Operating Costs 30% OR MORE!**




THE Briggs Oil Filtration Manual and four-page condensation discuss oil contamination, prove the need for a scientifically-designed filter to keep oil "refinery pure" in actual service.

They show how dirty oil "ups" motor maintenance and operation costs, how BRIGGS CLARIFIERS, proven by scientific tests to keep oil pure, can lower engine operating and maintenance costs 30% or more.

It may mean money in your pocket if you write for a FREE copy of either manual.

**THE BRIGGS CLARIFIER COMPANY**

**3260 K. St., N.W., Washington, D. C.**

## An Interesting Test-Fleet Operation

A FLEET of trucks and semi-trailer units, each loaded with eight tons of sand, are racing day and night over Southern California deserts and mountains in a unique program of research carried on by engineers of the Ethyl Gasoline Corporation to improve the performance of engines and fuels.

One truck has already sped 150,000 miles, more than six times the distance around the world. The area traversed is within a radius of 150 miles of San Bernardino where climatic and geographic conditions encountered in everyday automobile operation are reproduced in greater diversity than in any other region of the United States.

One of the test routes consists of an almost continuous climb for twenty-six miles from the valley floor to the summit of a mountain pass with an increase in elevation of over 3,000 feet. The test trucks operate at wide-open throttle for practically the entire stretch, working the engines to the utmost of their ability.

High speed tests are run on the bed of a dry lake which has a smooth, hard, level surface, and is several miles wide and twelve miles long. Special tests are made in various parts of the region in extremes of hot or cold weather, depending on the engine or fuel qualities under investigation, and still others are made under conditions representing average service.

The sand load of every truck and trailer combination, equal to that which it would carry in regular commercial service, is sufficient to bring the gross weight of the unit to 34,000 pounds. The trucks are driven back and forth over the test routes, stopping only for fuel, oil and grease, and necessary repairs, or for the supervising engineers to make periodic measurements of the performance and of the condition of various engine parts.

The test vehicles are equipped with special instruments to indicate the length of time they are operated each day, the engine speed, inlet manifold vacuum, rate of fuel consumption, crankcase oil temperature, carburetor air temperature, and fuel line pressure, in addition to the ordinary speedometer, water temperature indicator, oil pressure gauge, ammeter and fuel supply gauge.

Each truck also is provided with two complete fuel systems, one system supplying fuel to one group of three cylinders and the other supplying the other three cylinders, so that different fuels may be directly compared in the same engine at the same time. The total capacity of the gasoline tanks on each truck is approximately 200 gallons.

Research tests in the early years of the automobile industry were conducted almost entirely on roads within a few hundred miles of the factories, and attention was concentrated on developing reliable performance under average driving conditions, the Ethyl engineers point out. With the present almost universal use of the automobile in the United States and Canada in all kinds of weather, it has been found that tests of vehicles and fuels must be conducted under an equally wide range of conditions.

It is as a result of this type of research work by automobile and fuel companies that modern cars and trucks may be driven from one boundary of the country to another, on fuel obtained practically anywhere en route, at any time of year, and always deliver performance which a few years ago could not be obtained under any conditions.

## Diesel-Powered Unit Has Many Features

(*Continued from page* 34)

The total capacity of the two tanks is 6,400 gallons. The tank on the truck is built with two compartments; the front section holding 150 gallons of Diesel fuel for the engine and the remainder holding 2,700 gallons of gasoline. The tank on the trailer holds 3,550 gallons of gasoline.

This interesting unit, said to be "America's first air-conditioned truck", was designed and built by Allen J. Kayser, Utility Trailer and Six-Wheel Attachment distributor in Denver, Colo. He will be glad to send anyone further details on request.

●

## Twin-Truck Assembly Is Developed

(*Continued from page* 36)

The unit has given a very good account of itself. We get 7 to 7½ miles per gallon of gasoline. A wonderful saving could be effected by using Diesel power in an assembly of this kind.

Among the advantages which we have observed are the following:

(1) Flexibility of power. We can use either one motor or two.

(2) Insurance against road delays. One of the units will always be in shape to get the load to town. The chances of failure occurring on both power units at the same time are rather remote.

(3) A small truck for light loads or when running empty. A truck with twice the power of the one, for larger loads.

(4) When the load is such that the one motor labors, we can use two, with great economy.

(5) Consistent road-speed. Good time can be made without speeding.

(6) If a popular make of truck is used for the assembly, parts are easily and cheaply obtained.

(7) Long life. Standard gear ratios are used. Lower gears and helper transmissions are not required.

(8) Low first cost. Obviously, this unit may be obtained at a price which needs no explanation.

(9) Power selectivity. After a large load has been started moving, and the driver can anticipate a few miles of good going which one motor can handle, he turns off the switch of the motor he does not want, and puts his gear-shift lever of the idle unit into neutral. He is now handling a big load with a small truck. Should he see a hill coming, he turns the ignition switch on, steps on the starter of the idle motor, guns her a little, puts his gear-shift lever into high, lets in his clutch, and over the hill he goes. This performance, in contrast to slowing up and shifting gears, is obviously advantageous.

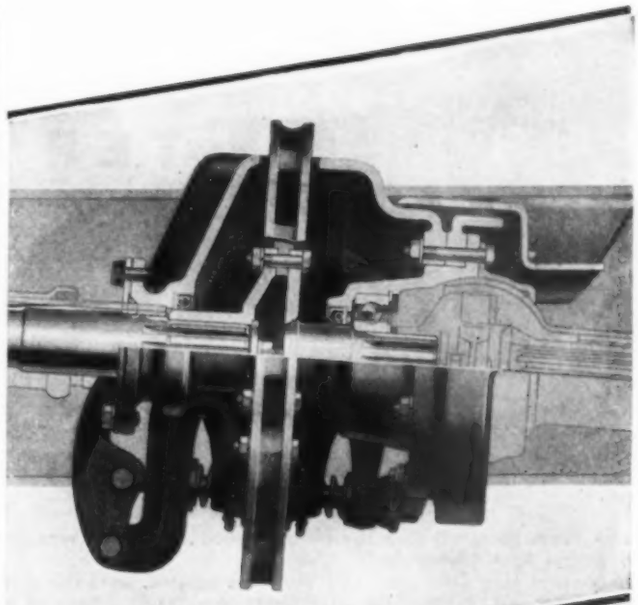
(10) Light weight. The Chevrolet assembly shown here is capable of about 150 h.p., the unit weighing less than 6,500 pounds.

(11) Small tires. Because of the tandem construction.

(12) Trade-in value. A dealer will take this assembly in on trade for a new truck, for he can disassemble it and he will have two popular sized trucks to resell.

(13) Good traction. Because of the tandem drive.

The foregoing information is offered for whatever it may be worth. As a fleet operator I am glad to convey it to other operators, through the medium of this publication.—*Ed. C. Merry.*

CROSS-SECTION CHEVROLET BRAKE

# It never grabs or chatters

A noisy, uneven-acting brake is dangerous. Today's big horse power, high speed, crowded traffic and smooth roads call for powerful, positive brakes under direct control of the driver. "Chattering" and "grabbing" indicate a brake not functioning as it should. The brake that never vibrates or complains is the TRU-STOP.

### for Chevrolet and Ford V-8 Trucks and Buses

The TRU-STOP Emergency Brake, now available in three sizes for Chevrolet and Ford V-8 trucks and buses, meets all requirements of the most rigid state laws. It handles capacity loads at any speed. Its ventilated disc is self-cooling. Brake pressure in exact proportion to effort at brake lever is distributed evenly over entire lining surface. Any mechanic can install it, any driver adjust and reline it.

*The TRU-STOP Emergency Brake is made also for larger trucks and buses.*

AMERICAN CABLE DIVISION
BRIDGEPORT, CONN.

AMERICAN CHAIN & CABLE CO., INC.

*District Offices:* New York, 230 Park Ave.; Chicago, 400 West Madison St.; San Francisco, 630 Third St.

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Manufacturers of the famous Weed American Bar-Reinforced Tire Chains

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**TRU-STOP**
EMERGENCY BRAKE

*for Chevrolet and Ford V-8 Trucks & Buses*

Learn where operating costs can be cut—gasoline, oil, tires, repairs—by getting *true* mileage facts.

Veeder-Root Hub Odometers give you these reliable, *workable* mileage records, because they can be adjusted to agree to a tenth of an inch with all changes in wheel and tire dimensions. They clock up every mile a truck goes—both forward and backward—and their accuracy is beyond dispute.

Veeder-Root Hub Odometers are as strongly constructed as your trucks themselves. *They stand up.* Dust and dirt cannot get inside to cause damage and unnecessary repairs. And tampering is easily detected.

Write for further proof of what these valuable instruments are doing for other fleet owners.

**VEEDER-ROOT Inc.**
HARTFORD, CONN., U. S. A.

**LATHAN**
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*Graduated Self-Compensating* **"LOCOMOTIVE CONTROL"** *of Trailers*

**POWER BRAKE**

SIMPLE as moving a finger. Effective as railroad brakes. Requires no change in present brakes. Not slowed up by cold. No oiling, no greasing, no maintenance. Used for years by largest operators. Complete line. Low prices. Write for FREE Catalog.

**Lathan Co., Inc.** SAN FRANCISCO—Polk & Pine Sts. DETROIT—477 Selden Ave.


## G.M.C. Has New Line of Trucks

(*Continued from page* 50)

door without relinquishing control of the vehicle.

The engine is quickly and conveniently reached on COE models through cowl panel doors as well as by means of removable engine cover and cab floor-boards. Wheelbases of the cab-over-engine models range from 108 inches to 196 inches, providing load spaces for bodies from 8 feet up to 22 feet in length.

In addition to a complete new series of trucks, the GMC line also includes a complete new group of trailers with such improvements as heavier frames; new cast steel support legs; wider, reinforced support wheels; straight shaft with folding type crank handle; heavier springs; rubber-bushed radius rods; larger spring brackets, spring pins and spring shackles; improved lower fifth-wheel construction and many other refinements.

According to J. P. Little, vice-president directing sales, 1936 has been the most successful year in the history of the organization. Every indication, he asserts, points to record sales for 1937. The plant capacity has been increased by the addition of 142,000 square feet of floor space and the dealer organization has been greatly strengthened.

With the inclusion of the short wheelbase ½-ton unit and the addition of cab-over-engine models in a wide range of sizes, plus refinements and improvements throughout the entire line, the GMC line, Mr. Little believes, now has an appeal for every truck buyer in every industry throughout the country. Prices for all models, he points out, are competitive, while appearance and mechanical features are much improved. . . . For free copies of new literature covering the 1937 GMC line, address General Motors Truck Co., Pontiac, Mich. . . . Mention of FLEET OWNER always helps.

●

## White Announces New "700" Series

(*Continued from page* 57)

shaft drive gears. Gear ratios are as follows: 1st, 6.40; 2nd, 3.09; 3rd, 1.69; 4th, direct; reverse 7.82. Steering gear is of the new Ross cam-and-lever type, having twin-levers.

Front axle is the White 32D, equipped with tapered roller bearings throughout. Rear axle is the White 36C, of the single-reduction, full-floating type having banjo-housing cast in one piece. All gears are of heat-treated alloy steel, mounted in removable carrier. Ratios available include 4.857, 5.833 and 6.80. Disc wheels

*The complete and fast cleaning of parts is made simple with the use of MAGNUSOL in cold solution.*

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Use MAGNUSOL in cold solution for quick, sure tank cleaning of dirty motor blocks and heavy dismantled parts. No heating required.

MAGNUSOL leaves no sludge in the tank and the solution can be used over and over again.

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**MAGNUS CHEMICAL COMPANY**
36 South Avenue Garwood, New Jersey

**MAGNUS CLEANERS**

are provided, with 5-inch rims and 6.50 x 20 balloon tires.

Service brakes are of the White four-wheel internal expanding type, with moulded linings. Front brakes are 14 x 2 inches; rear 16 x 3 inches. Brake drums are gun iron. Parking brake is of the external contracting type, mounted on the transmission at the rear. Drum is 8 inches in diameter and 2½ inches wide.

Frame is pressed-steel channel section, with channel section cross-members gussetted to frame. Side-rail dimensions are 7-15/16 x 3 x 7/32 inches. Frame width is 34 inches. Springs are of the semi-elliptic type, front 40 x 2 inches, with eight leaves; rear 50 x 2½ inches, with 10 leaves. Helper springs are standard equipment. Two universal joints are used. These are of the Spicer, needle-bearing type, series 1350.

Accessories include: single-bar spring-type bumper; electric horn; streamlined crown-type fenders; running-boards; spare rim; toe-and-floor-boards; speedometer; ammeter; oil-pressure gauge; ignition and foot-operated starting switches; choke and throttle controls; electric gasoline gauge; engine heat-indicator. Lighting is of the 6-volt type and includes tilt-ray headlamps; combination tail-and-stop lamp; instrument board lamp and lighting switch.

Interesting literature is now ready, illustrating and describing the new White 700 series in fuller detail than we have been able to do here. For your free copy address The White Motor Company, Cleveland, Ohio. . . . Mention of FLEET OWNER always helps.

●

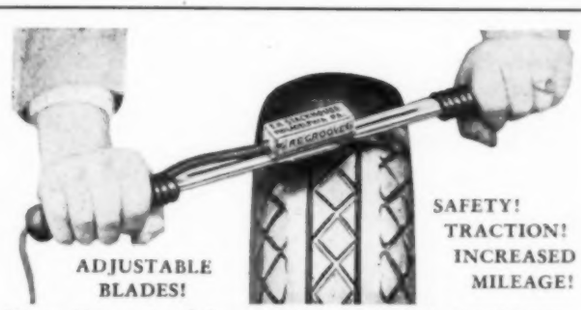
## Newspapers Extend Use of Trucks

USE of motor vehicles by daily newspapers in making deliveries is among the safest types of automotive operations, it is revealed by a survey based upon reports from newspaper executives in all parts of the country and conducted by the National Highway Users Conference.

The number of newspaper-truck accidents has been reduced by two-thirds during the past five years, the survey shows.

The reports received from metropolitan dailies, as summarized, also set forth advantages provided by the newspapers' constant and extending use of automotive vehicles in circulation operations.

Among these cited advantages are: improved service to readers, efficient movement of late and extra editions, closer gearing of dead-lines to delivery schedules, reduced handling and circulation increases.


**Tires Regrooved in 10 Minutes with Stackhouse Tool—Can Be Operated by Anyone—*Send for Full Information.***

**E. H. STACKHOUSE** 219 N. 63rd STREET PHILA., PA.

THAT BIRD DOESN'T KNOW
***Sani-Flush***
CLEANS OUT ANTI-FREEZE

Very soon you should remove the winter's accumulation of rust and sludge that clogs radiators. You can clean out the whole fleet for 6c per passenger car (15c for largest trucks, buses and tractors.) Insure cool-running motors that are economical to operate.

Sani-Flush is perfectly safe. Not caustic. Can't harm engine or fittings. Sold in economical 15-lb. pails by grocery, drug and hardware stores or jobbers. The Hygienic Products Co., 218 Seventh St., Canton, Ohio.

FREE WRITE ON YOUR FIRM'S STATIONERY FOR A GENEROUS SAMPLE OF SANI-FLUSH. TRY IT. NO OBLIGATION.

K-D SAFETY LIGHTING EQUIPMENT

**START ON THE BRIGHT SIDE FOR 1937 WITH K-D**

APPROVED in all states where MANDATORY laws compel installation of approved equipment.

**K-D SHO-TURN**
**right and left turn signals**

Six different types in combinations to serve every purpose.

**K-D TRIFLEX**
**Reflex Reflector**

*Write for catalog and 1937 chart of state lighting laws.*

The **K-D LAMP** Co.
610-616 West Court St., Cincinnati, O.

# Fleet Owners' Records Show . . .

that a saving of even a fraction of a cent a truck mile amounts to a substantial sum during a year's operation. That is why we say . . . put your maintenance cleaning on the dependable basis of GUARANTEED performance . . . for when you bring to your cleaning operations time-tried Oakite materials and methods that so many other fleet owners are using, you, too, can be reasonably assured of securing the same economies and the same advantages they now enjoy.

## TELL US

### which job you want to do better and more economically!

Whether for cleaning parts before overhaul; stripping paint and lacquers from trucks before repainting, removing traffic film and grease from chassis or washing floors . . . there is an Oakite material and method that will enable you to do the work efficiently and at low cost.

### Competent Nation-Wide Service Available

Right now, at the beginning of the New Year, is a good time to start saving. So why not get in touch with our local Service Man or write us direct? There is no obligation . . . all we ask is an opportunity to demonstrate under actual operating conditions the many benefits that can be yours through the use of modern Oakite cleaning materials.

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SPECIALIZED INDUSTRIAL CLEANING MATERIALS & METHODS

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The NEW LINCOLN WELDER
with Plus-Zone Range extends arc welding to extremely light body work and heavy frame sections.

Now, for the first time, automotive repair and fabrication shops can get the full measure of benefits of the arc welding process, from one welding machine.

Lincoln presents the New 150-Ampere Welder with Class B Non-Inflammable Insulation. This is the only welder that can meet the tiny arc demands of light body work and, with equal performance, permit sustained operation at the high current values required for heavy frame sections. These two Plus Zones are provided, outside of the normal welding range.

This outstanding development warrants your immediate investigation. The coupon will bring you complete details.

Salient Facts
RANGE.. 45 to 200 Amperes with reserve overload capacity.
SIZE.... Only 2 feet square.
WEIGHT. Only 437 lbs.
And the price is so low it will astound you!

**THE LINCOLN ELECTRIC COMPANY**
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Send a free copy of Bul.-314 describing the New Lincoln 150-Amp. Welder to—

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America's Van Body Builders

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DUA-SAF SIGNAL

The Stop-Light that Speaks with Action

Combination Tail and Swinging STOP Light for all passenger cars.

List Price: $8.50

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*Write for fleet discounts and full details*

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as LOW as $4.60

SPECIAL: Complete special-priced construction sponge rubber cushions (as shown in picture) as low as $4.60. Write for prices on your sizes.

STANDARD: Patented, full-cushion made-to-order Sponge-Aire construction—the ultimate in comfort and economy, available at moderate prices. Write for prices on your sizes.

SPONGE-AIRE SEAT COMPANY, Inc.

BUFFALO, N. Y.

## Research on Tire Chains at Mellon Institute

AN Industrial Fellowship that is investigating broadly the durability of automotive tire chains has been founded at Mellon Institute of Industrial Research by The McKay Company of Pittsburgh, Pa., which manufactures commercial chains of all types. This Fellowship, which began operation on September 15, 1936, has for its objective the production of better chains, particularly for the automotive industry. A comprehensive program of basic research is being carried on, including studies of the design, materials, processes of manufacture, and testing of chains.

The McKay Fellowship is headed by Dr. David F. Helm, who received his professional education at Denison University (A.B., 1928), Michigan State College (M.S., 1930), and Ohio State University (Ph.D., 1934).

## Advantages of Aluminum Heads?

WE are often asked the reasons for the use of aluminum as a cylinder head material. Some operators only think of the weight-saving and question the necessity, since there is relatively little weight-saving over the use of cast iron heads.

Even though the use of an aluminum head does save some weight, the main reason for using it is because of the high heat-conductivity of aluminum, *Aluminum News Letter* tells us.

When an engine is running there are millions of explosions in the cylinders and these explosions make a great amount of heat which must be distributed.

Aluminum heads are making a real contribution to the problem of proper heat distribution because they carry the heat of combustion away faster than cast iron and since heat is conducted uniformly through aluminum there are no "hot spots" in the heads.

Also, it is possible to operate an engine equipped with an aluminum head at a higher compression ratio than if it were equipped with a cast iron head. A higher compression ratio, of course, means more power.

It is found that power is increased from 5% to 15% while less gas is needed when the aluminum heads are used.

Too, it is found that the use of aluminum minimizes carbon formation in the combustion chamber.

The following 1937 cars have aluminum alloy cylinder heads: Chrysler Imperial, Chrysler Custom Imperial, Chrysler Airflow, Cord, Ford, Graham, Lincoln, Lincoln Zephyr, and Pierce Arrow. They are "standard" and "optional" on Packard and Studebaker, and are "optional" on Chrysler Royal, DeSoto, Hudson, Lafayette, Reo, and Terraplane.

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810 OUTSIDE ROOMS $2 from daily EACH WITH BATH AND SHOWER

BARLUM

CADILLAC SQUARE AT BATES STREET

# 50 bags out of 100 are BONUS LOAD

Stake body built of Alcoa Aluminum Alloys for Philadelphia Wool Scouring & Carbonizing Company, by Herman Kirstein, Philadelphia, Pa. Mounted on Autocar "UD" chassis. Replaces *two* trucks which had bodies built of heavy materials, each weighing 5,500 lbs., with payload capacity of 60 bags of wool. Aluminum body weighs 2,190 lbs., carries 100 bags of wool.

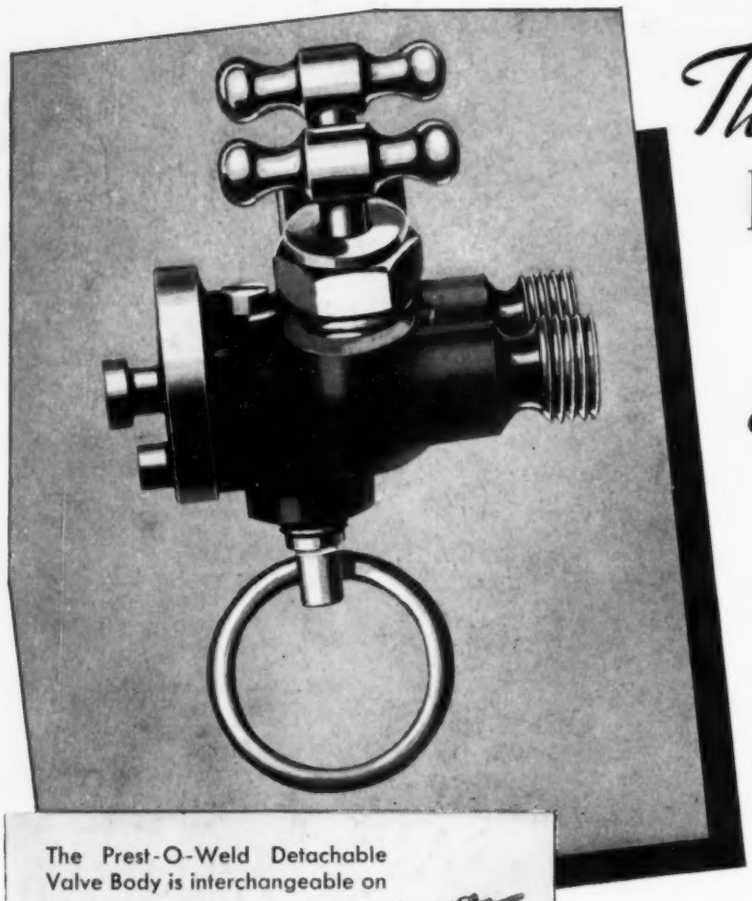
Says the operator of this truck: "The reason for the use of Aluminum was obviously to reduce our cost of hauling. We turned in two trucks when we bought this one, and are at present saving the entire cost of truck and body every nineteen months."

That is a typical illustration of what Bonus Load does. Replace an unnecessarily heavy body, built of heavy materials, with an economically light body, built from the strong alloys of Alcoa Aluminum. The difference in weight permits more payload — in this case enough extra load to let one truck do the work previously requiring two. The Bonus Load, 50 bags of wool, costs nothing to haul, since it rides in place of discarded dead weight. The money saved on the cost of hauling the Bonus Load soon pays for the light, economical Aluminum body.

According to the Philadelphia Wool Scouring & Carbonizing Co., appearance is an extra advantage — they can easily clean and polish the non-rusting body of Aluminum, so it stays "as attractive as a pleasure car," and get much favorable publicity.

Similar savings can be obtained on the trucks you operate. Send to us for the complete handbook, "Alcoa Aluminum for Truck Bodies." ALUMINUM COMPANY OF AMERICA, 2161 Gulf Building, Pittsburgh, Pennsylvania.

ALCOA · ALUMINUM



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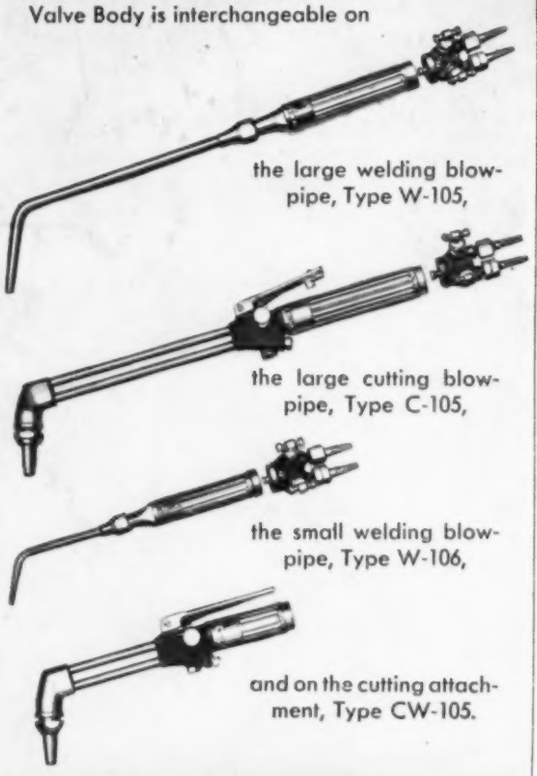
The detachable valve body is an exclusive Prest-O-Weld feature which enables the operator to change from one blowpipe to another in 10 seconds without disturbing the hose connections and without the use of a wrench.

When you own a Prest-O-Weld blowpipe with the detachable valve body, you can add other complete blowpipes to your equipment by purchasing only the handles and tips you need.

Ask your jobber for a demonstration of this and other practical advantages. See for yourself how the exclusive "10-second" feature—

- Reduces initial investment,
- Saves time in changing blowpipes, and
- Saves oxygen and acetylene

The Prest-O-Weld Detachable Valve Body is interchangeable on



the large welding blowpipe, Type W-105,

the large cutting blowpipe, Type C-105,

the small welding blowpipe, Type W-106,

and on the cutting attachment, Type CW-105.

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